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# THE HUMAN NEEDS OF LABOUR

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# THE HUMAN NEEDS OF LABOUR

BY

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"MEN accept the doom, the blessing of work; they do not dispute the necessity of the struggle with Nature for existence. They are willing enough to work; but even good work does not necessarily insure a proper human subsistence, and when they protest against this condition of things they are told that their aims are too 'materialistic.' Give them relief from their materialistic anxiety; give them reasonable certainty that their essential material needs will be met by honest work, and you release infinite stores of human energy for higher efforts, for nobler ideals, when

"'Body gets its sop, and holds its noise, and leaves soul free a little.'"

MR. JUSTICE HIGGINS,
*High Court of Australia, Melbourne.*

that we hoped for was a very gradual and a very tentative improvement.

But the war has changed all this. We have completely revised our notions as to what is possible or impossible. We have seen accomplished within a few brief months or years reforms to which we should have assigned, not decades, but generations.

I do not believe for a moment that in the future we shall allow millions of our fellow-countrymen, through no fault of their own, to pass through life ill-housed, ill-clothed, ill-fed, ill-educated. But if their conditions are to be remedied, the present scale of wages for unskilled labourers must be materially raised.

What are the human needs of labour? At what cost can they be supplied? Can industry bear this cost? and, if not, can it be met in any other way? These are the questions I attempt to answer in this book.

I first ask for how many people a man's wage must provide, or, more particularly, what proportion of married men have children dependent upon them for some period of their lives; how

many children, and for what number of years. We must know the answer to these questions before we can rightly assess the needs of the workers.

I next consider the amount of food necessary to keep the body in health, and the cost of supplying it.

Similarly, I consider the question of minimum necessary expenditure for housing, clothing, fuel, and sundries.

A chapter is devoted to minimum wages for women. I discuss the extent to which women workers are responsible for the maintenance of dependants, and give the results of some original investigations into the question. I also ask whether allowance should be made for the maintenance of dependants when fixing women's minimum wages.

In the last chapter I indicate roughly the level at which minimum wages should be fixed after the war, in order to meet the requirements of a household of five persons. I also suggest a means of dealing with larger families which it may be necessary to adopt until industry has become so

productive that their needs can be met through the ordinary channel of wages.

In conclusion, my thanks are due to all who have helped me in the preparation of this little book. I am grateful to F. G. Hopkins, M.A., F.R.S., Professor of Biochemistry at Cambridge University, and to Mr. S. H. Davies, M.Sc., who have advised me on the question of food requirements, and who have read the chapter dealing with that subject and approved of the standard adopted. I also thank cordially the Registrar-General, Sir Bernard Mallet, K.C.B., and Dr. T. H. C. Stevenson, C.B.E., for much help given in the preparation of Chapter I.

I particularly wish to acknowledge the great help of my secretary, Mr. Frank D. Stuart. He has not only made all the very laborious calculations in connection with Chapters I. and II., but has offered many shrewd and useful criticisms. He has likewise undertaken personal investigations, and supervised those conducted by others.

Lastly, I wish to express my cordial thanks to Miss May Kendall; to my father, Joseph

Rowntree; and to R. H. Tawney, B.A., who have read through the book in manuscript, and given me the benefit of many helpful suggestions.

B. SEEBOHM ROWNTREE.

York, *March* 1918.

# THE HUMAN NEEDS OF LABOUR.

## CHAPTER I.

### THE FAMILY.

IN discussing the principles on which minimum wages should be fixed, we should draw a clear distinction between *minimum* wages and wages above the minimum. The former should be determined primarily by human needs, the latter by the market value of the services rendered.

The first step to take in fixing minimum wages is, therefore, to ascertain the human needs of the workers. We can then discuss the cost of providing for them.

As society is constituted at present, a father

of a family is held responsible for the maintenance of both wife and children until the latter are able to earn for themselves. It is, therefore, necessary at the outset of our inquiry to determine the number of dependants to be allowed for in assessing the financial responsibilities of married men.* No statistics, however, have hitherto been published which supply the necessary information.

The knowledge that the average number of children of fourteen years of age and under was 1·7 per married male at the date of the last census does not help us. We must ascertain, if possible, what proportion of married men have children dependent upon them at some period of their lives; how many children, and for what number of years. But though these data are essential if our calculations are to rest on a sound basis, they have never been collected.

* The wages of all adult males must inevitably be governed by those of married men. It would clearly be impossible to pay married men one wage, and single men another, for the same service. Only about 10 per cent. of men, however, remain permanently single.

Recognizing that the argument in this book would be incomplete without them, I consulted the Registrar-General, and am greatly indebted to him and to members of his staff for their help. In discussing the matter we at once saw that it would not be an easy task to extract the facts required from the census schedules; for not only is the actual work involved very laborious, but investigations can only be suitably undertaken in certain districts. Families cannot be investigated until they are practically completed—that is, when the mother is about forty years of age. But in rural districts, and in some towns, the children leave home early to enter domestic service, or to find more remunerative work in other industries than those available near home. If such localities were selected for investigation, the proportion of children who had left home, and whose ages are not stated in the census schedules, would be so large as to vitiate the results. A satisfactory inquiry can, therefore, only be made in localities where in-

dustrial conditions are such that boys and girls as a rule remain at home until they marry. After careful discussion, we decided that the city of York would provide a suitable area for the investigation, since there is a great shortage of girl labour in the factories, and the girls tend to work there rather than to enter domestic service, and usually remain at home until they marry. Moreover, the presence of large railway works, as well as large factories, in York, provides work in great variety for the boys as they grow up, and for the most part they too stay at home. Doubtless a number of other urban areas could be found which would present similar characteristics, but a good deal of local knowledge would be required before they could be selected. The facts given in this chapter refer to the city of York, which at the date of the last census had a population of 82,282.

Some brief account may here be given of the method of investigation employed. The first step was to extract from the original census

papers all families where the mother was between forty and forty-five, and to note the ages of the children.* This work was undertaken by the Registrar-General, and the figures were supplied to me. Furnished with this information, and allowing fourteen years of dependence for each child,† we ascertained, within the above group, the proportion of men with dependent children, the number of the children, and the number of years during which they were dependent. For

* It may be asked why this particular group of families was selected for investigation. The answer is that it was necessary, as already stated, to select those where the age of the mother was such that the families might be regarded as virtually completed. This would not have been the case had families been included where the mother was less than forty years of age. On the other hand, it was necessary to fix an upward limit to the age of the mothers because the proportion of children leaving the parental home increases very rapidly in later years.

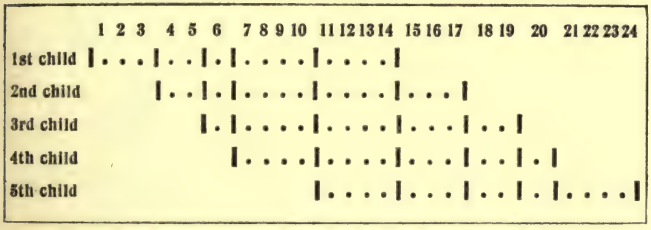
† I recognize, of course, that a child does not attain full economic independence upon such a wage as it can earn at fourteen years of age, but for the present purpose that is not the question. The question is: Assuming that a child has been maintained up to the age of fourteen, is the family worse or better off with such earnings as a child of fourteen could normally command than it would be if the child were removed? I think most parents would admit that they were slightly better off with the child's earnings, although they had to provide it with board and lodging and clothing.

instance, assuming there are in a family five children, aged at the date of the census twenty, seventeen, fifteen, fourteen, and ten, the father's responsibility for the maintenance of children continues in varying degrees for twenty-four years from the birth of the first child. For the first three years he has to maintain one child ; for the next two years, two children ; for the next one year, three children ; for the next four years, four children ; and for the next four years, five children. Then, as the oldest child has reached the age of fourteen, the father's responsibilities begin to decrease. For the ensuing three years he has four children to maintain, then three for two years, then two for one year. The fourth child is now fourteen, leaving the youngest dependent on the father for four years longer, which make up the period of twenty-four years. The matter can be made quite clear by the use of the diagram on page 21.

The figures at the top represent the year of life of the first child, the dots represent the

years during which each child is dependent, and the vertical lines the periods when changes occur in the number of children dependent upon the earnings of the father.

This was the principle on which the responsibility of the father for the maintenance of children was arrived at in the case of every family. Before giving the results for the whole of the




families studied, let us ask whether the method of investigation adopted is likely to lead to conclusions which are substantially accurate; and whether, if so, those conclusions will probably hold good for the country as a whole. What possible sources of error must we allow for?

In the first place, we have made the assumption that the families were completed. This is not

entirely correct, since a certain number of children are born to mothers after they reach the age of forty. There are no English statistics in this connection; but some figures collected in Berlin for 1896 to 1900 showed the proportion to be 6 per cent. As the average age of the mothers investigated by us was about forty-two and a half years, and as practically no children are born to mothers over forty-five, our results will tend to understate parental responsibility by about 3 per cent.; or, in other words, the families investigated were 97 per cent. completed.

Again, we have ignored children living away from home. Although the proportion of these is much smaller in York than in many districts, it is still considerable. The *number* of children who have left home is stated in the census returns; but as their ages are not given, we could not take account of them in our calculations. Their number was 666, which is 11·4 per cent. of the total number of children in the families in-

vestigated. Had we been able to include them, they would have added one child to every three families. This is a somewhat substantial omission, which also tends to an understatement of the extent to which parents are responsible for the maintenance of children.

Once more, we take no account of the children belonging to the families investigated who have died, but for whose maintenance during their lifetime the parents were responsible. As in these cases the census returns give neither the age to which a child lived nor the date of its death, we cannot calculate the period of its dependence. We know, however, that the total number of such children was 1,426, which is practically equivalent to two children for every three families. Had the data which would enable us to make due allowance for them been available, the effect would have been considerably to increase the figures given in the following pages.

Against this, however, must be set the fact

that we assume that all the children living at the date of the census will attain the age of fourteen years. To a certain extent these two sources of error cancel each other, though I think the balance will be decidedly in the direction of understating the extent to which parents are responsible for the maintenance of children.

We must also bear in mind that the investigation here described covered all classes of the population in York. It is notorious that families are larger among the poorer paid workers than in any other class, and for this reason also my figures tend to understate the number of dependent children in the class for which it is most urgent that minimum wage legislation should be enacted.

On the other hand, there are certain factors which bear in the reverse direction. First, we assume that all married men pass through a period when their wives are between the ages of forty and forty-five, ignoring the cases where the wives die before reaching this age. In such

cases families would probably be smaller. We have no knowledge of the proportion of families in which the wife had died young; but there were in York at the time of the census eighty widowers aged between forty and forty-five. Their inclusion in our calculations would have made a very small difference in the final figures, and it may, we think, be safely assumed that this source of error is negligible.

Secondly, in estimating the responsibility of the father for the maintenance of children, we have ignored all children over fourteen, regarding them as neither a financial liability nor a financial asset, since to adopt any other course would have introduced almost insuperable difficulties. Leaving out of account the extraordinary wages paid to children during the war, I think it may be assumed that any profit derivable on the payments made for board and lodging by children of fourteen and fifteen would be so small that for practical purposes it may be ignored; but the payments usually made by

older children leave a margin of profit which is available for general expenses. I point out, however, later on, that even to take account of this fact would not materially affect the conclusions to be derived from our figures.

On the whole, I think it may be safely asserted that the methods of investigation adopted, though probably the most accurate which can be devised short of a house-to-house investigation, tend somewhat to *understate* the extent to which working-class parents are responsible for the maintenance of children.

Now, to what extent may conditions in York be regarded as typical of the country as a whole? Before answering this question, we must ask whether the sample examined is large enough to yield reliable results, and whether the birth and death rates in York approximate to those for the country generally.

With regard to the first point, statisticians would probably agree that the size of the sample is too small to yield absolutely conclusive results,

and that in order to achieve this end further samples of the population should be investigated —possibly three or four others equal in size to the York sample. These should, however, be chosen with great care, for the reasons set forth on page 17.

As regards the second point, figures show that the birth and death rates in York approximate very nearly to those for the country as a whole. The average birth rate in York for the twenty years prior to the 1911 census was 29·0 per 1,000, and the average death rate 17·6; whereas the figures for the country as a whole were 28·5 and 16·6 per 1,000 respectively.

Further evidence that conditions in York may be regarded as fairly typical is afforded by the fact that at the date of the 1911 census the average number of children under fourteen per household was 1·7 in York, which was exactly equal to the average for the whole country.

Thus we think it may be assumed that the results of our inquiry in York approximate

pretty closely to the results which would be obtained by the use of similar methods throughout the country.

It may be suggested by some that the decline in the birth rate which has occurred during recent years will reduce the average number of children dependent on the father's earnings. This is true, but to a limited extent, for the decline in the birth rate has been accompanied by a reduction in the mortality of infants. Though fewer children are born, a larger proportion survive. Examination of such life tables as are available certainly shows that if we compare the present birth rate and death rate with the birth and death rates about twenty years ago, the number of children born and surviving per 100,000 of the population is less now than in the previous period. But the reduction is not sufficient to affect materially any conclusions to be drawn from the figures given in this chapter.* Moreover, it must be remembered that the decline in

* See Appendix A, p. 145.

the birth rate has probably been greater among the middle and wealthy classes and the higher paid artisans than among the poorer classes, who alone would be affected by any minimum wage legislation.

This discussion leaves the way clear for a statement of the results actually obtained by my investigation. These are given in the following tables.

NUMBER OF FAMILIES INVESTIGATED, 2,161.

(That is, all families in York where the mother was between forty and forty-five at the date of the 1911 census).*
Inquiry showed that there were :—

**350 families with no children living at home at the date of the census.†**

**1,811 families (83.8 p.c.) with one or more dependent children.**

**1,475 families (68.3 p.c.) with two or more dependent children. Of these:—**

1,446 (67·0 p.c.) have two or more dependent children for five years or more.

* There were 666 children away from home, equal to 0·3 per family, but these are not included in the above figures.

† A small number of these families had children (to a total number of 47) living away from home. As, however, their ages were not known, these children have been disregarded, as explained on p. 22.

1,332 (61·6 p.c.) have two or more dependent children for ten years or more.

762 (35·2 p.c.) have two or more dependent children for fifteen years or more.

**1,073 families (49.6 p.c.) with three or more dependent children. Of these:—**

1,003 (46·4 p.c.) have three or more dependent children for five years or more.

770 (35·6 p.c.) have three or more dependent children for ten years or more.

328 (15·1 p.c.) have three or more dependent children for fifteen years or more.

**713 families (33.0 p.c.) with four or more dependent children. Of these:—**

594 (27·5 p.c.) have four or more dependent children for five years or more.

348 (16·1 p.c.) have four or more dependent children for ten years or more.

106 (4·9 p.c.) have four or more dependent children for fifteen years or more.

**441 families (20.4 p.c.) with five or more dependent children. Of these:—**

298 (13·8 p.c.) have five or more dependent children for five years or more.

117 (5·4 p.c.) have five or more dependent children for ten years or more.

18 (0·8 p.c.) have five or more dependent children for fifteen years or more.

**214 families (9.9 p.c.) with six or more dependent children. Of these:—**

106 (4·9 p.c.) have six or more dependent children for five years or more.

34 (1·5 p.c.) have six or more dependent children for ten years or more.
2 (0·09 p.c.) have six or more dependent children for fifteen years or more.
81 (3·9 p.c.) with seven or more dependent children.
25 (1·1 p.c.) with eight or more dependent children.
4 (0·18 p.c.) with nine dependent children.

The facts set forth in the preceding table are illustrated in the diagram on page 33, which shows the proportion of families which would be inadequately provided for on the assumption that the number of children allowed for when fixing wages was respectively one, two, three, four, etc., per family. It also shows the period during which the families would remain in this condition. In comparing the diagram with the table it will, of course, be noted that the number of families inadequately provided for on the basis of allowing one child per family compares with the number of families which have *two* or more dependent children, and so on.

In the following table the 2,161 families investigated are classified according to the maximum

number of children who have been simultaneously dependent on the parent's earnings.*

| Maximum number of children simultaneously dependent. | Number of families. | Percentage of total families. | Number of children living away from home.† |
|---|---|---|---|
| None | 350 | 16·2 | 47 |
| 1 | 336 | 15·5 | 96 |
| 2 | 402 | 18·6 | 143 |
| 3 | 360 | 16·7 | 109 |
| 4 | 272 | 12·5 | 94 |
| 5 | 227 | 10·5 | 96 |
| 6 | 133 | 6·1 | 46 |
| 7 | 56 | 2·6 | 31 |
| 8 | 21 | 1·0 | 3 |
| 9 | 4 | 0·3 | 1 |
| | 2,161 | 100·0 | 666 |

† Not included in the preceding columns.

In examining the foregoing tables it is important to bear in mind the exact purpose for which the figures have been ascertained—namely, to guide us in deciding what number of dependants should be allowed for in fixing the minimum wage to be paid to men. In order to arrive at a sound judgment on this question, we need to know what proportion of men have

* For those who wish to go into the problem very thoroughly a table is given in Appendix B (p. 146), where the figures summarized in the preceding tables are given in greater detail.

| Number of Children allowed for when fixing wages:— | Proportion of Families who would be inadequately provided for on the basis of the preceding column, and the period during which this condition would last:— | | | |
|---|---|---|---|---|
| | *For 1 year or more.* | *For 5 years or more.* | *For 10 years or more.* | *For 15 years or more.* |
| 1 Child per Family | 68·3 % | 67·0 % | 61·6 % | 35·2 % |
| 2 Children per Family | 49·6 % | 46·4 % | 35·6 % | 15·1 % |
| 3 Children per Family | 33·0 % | 27·5 % | 16·1 % | 4·9 % |
| 4 Children per Family | 20·4 % | 13·8 % | 5·4 % | 0·8 % |
| 5 Children per Family | 9·9 % | 4·9 % | 1·5 % | 0·09 % |
| 6 Children per Family | 3·9 % | | | |


= Proportion of Families inadequately provided for.


= Proportion of Families adequately provided for.

children dependent on them for some period of their lives, how many children, and for what number of years.

The table on page 32 shows that half the men have had three or more children simultaneously dependent on them for shorter or longer periods. Nearly one-half (46·4 per cent.) have three or more dependent children for periods of at least five years. Thus it seems clear that in fixing minimum wages *at least* three children per family must be allowed for, since no minimum wage basis could be seriously regarded as satisfactory which for so many years was insufficient for one family out of every two.

Of course employers may argue that they should not have to pay minimum wages, which are based upon transitory needs, during the whole of a working-man's life. If the period of special pressure on the workman's purse only lasted for a few months, this argument might hold good. But we have seen from the table that 46 per cent. of the men have three or more dependent

children for *five years or more;* years, too, which are very critical from the standpoint of the future, since the mother is bearing children, and the framework of their bodies is being built up. Malnutrition lasting over five years of childhood will leave permanent traces on the physique of the next generation. Besides, even if the minimum is in excess of the day-to-day needs after the exceptional stress is over, the surplus will be needed to enable parents to save something towards their old age.

Moreover, the table on page 30 shows that 33 per cent. of the families have *four* or more dependent children for shorter or longer periods, and 27 *per cent. of them have four or more dependent children for five years or more.* I feel, therefore, that, on the basis of these figures, three is an underestimate rather than an overestimate of the number of children which should be allowed for.

But now we come to another point which is of fundamental importance. Let us consider,

not the proportion of *families*, but the proportion of *children* who will be adequately or inadequately provided for if the minimum wage is fixed on the basis of a household with three dependent children. The following table gives this information.

NUMBER OF CHILDREN IN FAMILIES INVESTIGATED, 5,837; NOT INCLUDING 666 CHILDREN AWAY FROM HOME.

**5,837 belong to families having one or more dependent children.**

**5,501 (94.2 p.c.) belong to families having two or more dependent children. Of these:—**

4,960 (84·9 p.c.) belong to families having two or more dependent children for 5 years or more.

4,081 (70·0 p.c.) belong to families having two or more dependent children for 10 years or more.

2,688 (46·4 p.c.) belong to families having two or more dependent children for 15 years or more.*

* It may at first sight appear strange that children should belong to families where the period of dependence lasts for fifteen years or more, although each child is regarded as becoming independent on attaining the age of fourteen. The apparent anomaly is due to the fact that the figures refer to the number of years during which varying numbers of children are dependent on the parents, and not to individual children. For instance, reference to the diagram on p. 33 will show that there were two or more dependent children for seventeen years, although every child reached independence at the age of fourteen.

**4,697 (80.5 p.c.) belong to families having three or more dependent children. Of these:—**

4,185 (71·7 p.c.) belong to families having three or more dependent children for 5 years or more.

3,420 (58·5 p.c.) belong to families having three or more dependent children for 10 years or more.

1,976 (33·9 p.c.) belong to families having three or more dependent children for 15 years or more.

**3,617 (62.0 p.c.) belong to families having four or more dependent children. Of these:—**

3,175 (54·4 p.c.) belong to families having four or more dependent children for 5 years or more.

2,550 (43·7 p.c.) belong to families having four or more dependent children for 10 years or more.

1,116 (19·1 p.c.) belong to families having four or more dependent children for 15 years or more.

**2,529 (43.3 p.c.) belong to families having five or more dependent children. Of these:—**

2,206 (37·8 p.c.) belong to families having five or more dependent children for 5 years or more.

1,500 (25·7 p.c.) belong to families having five or more dependent children for 10 years or more.

444 (7·6 p.c.) belong to families having five or more dependent children for 15 years or more.

**1,394 (23.9 p.c.) belong to families having six or more dependent children. Of these:—**

1,204 (20·6 p.c.) belong to families having six or more dependent children for 5 years or more.

619 (10·6 p.c.) belong to families having six or more dependent children for 10 years or more.

92 (1·5 p.c.) belong to families having six or more dependent children for 15 years or more.

**596 (10.2 p.c.) belong to families having seven or more dependent children. Of these:—**

500 (8·6 p.c.) belong to families having seven or more dependent children for 5 years or more.

209 (3·6 p.c.) belong to families having seven or more dependent children for 10 years or more.

12 (0·2 p.c.) belong to families having seven or more dependent children for 15 years or more.

**204 (3.5 p.c.) belong to families with eight or more dependent children.**

**36 (0.6 p.c.) belong to families having nine dependent children.**

The facts set forth in the preceding table are illustrated in the following diagram, which shows the proportion of children belonging to families which would be inadequately provided for on the assumption that the number of children allowed for when fixing wages was respectively one, two, three, four, etc., per family. It also shows the period during which the families would remain in this condition. In comparing the diagram with the table, it will, of course, be noted that the number of children in families inadequately provided for on the basis of allowing one child per family compares with the num-

**Number of Children allowed for when fixing wages:—**

**Proportion of Children belonging to Families which would be inadequately provided for on the basis of the preceding column, and the period during which this condition would last:—**

| | *For 1 year or more.* | *For 5 years or more.* | *For 10 years or more.* | *For 15 years or more.* |
|---|---|---|---|---|
| 1 Child per Family | 94·2 % | 84·9 % | 70·0 % | 46·4 % |
| 2 Children per Family | 80·5 % | 71·7 % | 58·5 % | 33·9 % |
| 3 Children per Family | 62·0 % | 54·4 % | 43·7 % | 19·1 % |
| 4 Children per Family | 43·3 % | 37·8 % | 27·5 % | 7·6 % |
| 5 Children per Family | 23·9 % | 20·6 % | 10·6 % | 1·5 % |
| 6 Children per Family | 10·2 % | 8·6 % | 3·6 % | 0·2 % |


= Proportion of Children inadequately provided for.


= Proportion of Children adequately provided for.

ber of children belonging to families where there are two or more dependent children, and so on.

In the following table the 5,837 children in the 2,161 families investigated are classified according to whether they belong to families in which

| Maximum number of children simultaneously dependent. | Number of families. | Total number of dependent children. | Percentage of total children. | Number of children away from home.* |
|---|---|---|---|---|
| 1 | 336 | 336 | 5·8 | 96 |
| 2 | 402 | 804 | 13·8 | 143 |
| 3 | 360 | 1,080 | 18·6 | 109 |
| 4 | 272 | 1,088 | 18·7 | 94 |
| 5 | 227 | 1,135 | 19·5 | 96 |
| 6 | 133 | 798 | 13·6 | 46 |
| 7 | 56 | 392 | 6·6 | 31 |
| 8 | 21 | 168 | 2·2 | 3 |
| 9 | 4 | 36 | 0·6 | 1 |
| | 1,811 | 5,837 | 100 | 619 |
| | 350 † | | | 47 ‡ |

* Not included in the preceding columns.

† Families with no children living at home at date of census.

‡ Number of children returned as being away from home in the families having no children living at home at date of census.

the maximum number of children simultaneously dependent on the parent's earnings was respectively, one, two, three, four, etc.

An examination of the preceding tables and

diagram shows that if we were to base minimum wages on the human needs of families with less than three children, 80 per cent. of the children of fathers receiving the bare minimum wage would for a shorter or longer period be inadequately provided for, and 72 per cent. of them would be in this condition for five years or more. If we allowed for three children per family in fixing minimum wages, 62 per cent. would for varying periods be inadequately provided for, and 54 per cent. would be in this condition for five years or more. If we allowed *four* children per family, 43 per cent. of the children would still, for varying periods, be inadequately provided for, and 38 per cent. would be in that condition for at least five years; and even if we allowed *five* children per family, 24 per cent. of the children would be inadequately provided for, and over 20 per cent. would be in that condition for five years or more. In view of these facts it will, I think, be clear that any suggestion that minimum wages should be based on less than a

standard of three children per family, as some authorities have recommended, is entirely ruled out of court. Indeed, the figures indicate the urgent necessity, either by increasing the minimum wage or in some other way, of making provision for more than three dependent children per family.

Before discussing this question let us ask whether there are any circumstances not already taken into account which might affect our conclusions.

I have already stated (page 25) that in estimating the responsibilities of the father for the maintenance of children I have ignored all children over fourteen, regarding them as neither a financial liability nor a financial asset. The payment by older children of sums for board and lodging does, however, sometimes leave a margin of profit available for general expenses.

Let us now try to assess the practical significance of this fact. With this end in view, I have examined the case of every family returned

as having four or more children dependent on the father's earnings for a period of five years or more.* I have ignored any small profit which may be derivable from the payments made by children during their fifteenth and sixteenth years, but have assumed that the profit derivable from the payment made by each older child would suffice to maintain a younger child. This is to make a very generous estimate of the margin of profit on the older children's payments. Its effect on my figures is almost insignificant, for out of 594 families, in only twenty-one cases, or about 3½ per cent., is the period during which four or more children are dependent reduced to less than five years.

The fact is, that in the case of large families it may almost be taken for granted that at least four children are simultaneously dependent for

* It may be asked why I have only examined families with four dependent children. The answer is, that in smaller families the children are in the great majority of cases born within a period of seven years, and thus must be simultaneously dependent on the father's earnings for at least seven years—that is, until the oldest child is fourteen.

five years or more before the first child reaches the age of sixteen.

It may be argued that I have made no allowance for the saving which may be effected by men receiving a minimum wage adequate to support a family consisting of a man, wife, and three dependent children, before any or all of the children are born. There are two reasons for this omission.

First, the efficiency wage assumes that the "home has been got together." It does not allow for capital expenditure for the provision of furniture, bedding, etc., but only for the necessary repairs and replacements. In the case of the lowest paid workers, however—and it is with those that we are primarily concerned—it is usual to begin housekeeping with a very meagre equipment, and to add to it gradually during the earlier years of marriage, before many children are born. Thus a portion, at any rate, of the sum which might have been saved against the period of special stress will

quite rightly be absorbed in the furnishing of the home.

My second reason for the omission is that I know too much about human beings to assume that we can count upon the voluntary savings of young married people to any appreciable extent. It is easy for the armchair moralist to charge the working man with being thriftless; but, after all, it is harder for a young man to save than for one who is older. He is at an age when the demand for a full life runs high. His physical vigour is at its maximum; his instincts are generous rather than prudent; and he relies upon himself to cope with fresh demands as they arise by getting more remunerative work, or perhaps by working harder. He may not wilfully mortgage the future, but he refuses to mortgage the present. As for children, they may not come, or they may not live; why sacrifice tangible satisfactions day by day to a mere contingency? Why, again, the finer type of worker may say, refuse to help a comrade who is in

actual need, for the sake of preparing to meet a need that is problematical?

In fact, although young people should be encouraged to be thrifty in every possible way, we must not reckon too confidently upon the results of their thrift.

I have already pointed out (page 35) that the margin between the minimum cost of living and the wage received, which exists in the years of married life following the period of special stress, is required in order to enable the parents to save something for their old age.

One further matter must be considered—namely, that I have not alluded to any supplementary earnings by the wife, or by children working at odd jobs out of school hours, or on Saturdays. I think, however, it will be generally admitted that in determining minimum wages no allowance should be made for such precarious sources of income. A woman with a large family has neither time nor strength to do more than attend to her household duties,

and educationists are unanimous in their view that school children should not work out of school.

Now, having dealt with every consideration which might modify the results of our inquiry, we are still faced with the fact that if a minimum wage is based on the needs of a household with three dependent children, a very large proportion of the families in receipt of that wage will, for a period of five years or more, be inadequately provided for.

It would be difficult to over-emphasize the gravity of this situation. How will the nation confront it ?

Leaving out, as obviously impracticable, the suggestion that employers should be called upon to graduate wages in accordance with the measure of a worker's parental responsibility, it seems there are four feasible alternatives :—

(1.) We may adopt the simple but disastrous policy of *laissez-faire.*

(2.) We may fix a minimum wage based on

the needs of families with, say, three children, and refuse to deal with larger families.

(3.) We may fix a minimum wage based on the needs of the larger families.

(4.) We may fix a minimum wage based on the needs of families with, say, three children, and devise a scheme whereby the State would supplement that minimum in the case of larger families during the period of special stress.

These alternatives cannot suitably be discussed until we have considered the cost of providing adequately for families of different sizes. Their discussion will, therefore, be postponed to the concluding chapter.

## CHAPTER II.

### FOOD REQUIREMENTS.

My object in this chapter is to estimate the cost of the worker's dietary. Some people imagine that since diets vary infinitely in character, and individuals also vary both in the amount of food which they need and in the amount of physical work which they perform from day to day, it is useless to attempt to estimate the food requirements of a class. But this is not so. Obviously, no hard and fast figure can be laid down representing with mathematical accuracy the sum which each individual must expend on food; but it is possible, with the aid of investigations made by physiologists, to arrive at a figure sufficiently accurate for my present purpose. That purpose is to ascertain the lowest

sum which the members of the class of unskilled workers, as a whole, must expend upon food if they are to provide adequately for the maintenance of physical efficiency. No doubt any general figure of this kind would slightly underestimate the needs of certain individuals and overestimate those of others. But it would be absurd to call it useless because of this. It might as well be argued that we could not design a standard chair suitable for a public hall because people differ in height and size, or decide upon a standard height for a doorway because when it was built some very tall people might knock their heads, while others could pass through a much lower one. For all kinds of purposes, standards are fixed which are based upon the normal needs of the class of people concerned; and, similarly, it is perfectly possible to fix a standard of food requirements.

Nutriment may be provided in an infinite number of forms, varying from the prison menu to the menu provided for those who dine at the

Ritz. But it is possible to reduce all dietaries to a common denominator, since they all consist of certain essential constituents. Chemical analysis shows in what proportion these are present in any foodstuff, no matter how complicated. If, therefore, we can, with the aid of information provided by physiologists, ascertain the amount of those essential constituents necessary to keep the body in good working order, it is comparatively easy to select suitable dietaries containing the required nutriment, and to ascertain the cost of providing them. The essential constituents of which all food consists are protein, fats, carbohydrates (as starches and sugar), mineral salts, and water. For our present purpose we may disregard the two last, since any dietary which provides enough of the first three will almost inevitably contain sufficient mineral salts, and water costs nothing.

As expenditure on food constitutes so large a proportion of the cost of living in a working-class family, we must investigate the question

of food requirements in some detail, in order to satisfy ourselves that the conclusions arrived at are founded upon reliable data. First, however, let us define the precise part played by food in the human mechanism. This has been done so clearly and concisely by Messrs. Wood and Hopkins in their pamphlet, "Food Economy in War Time," that I cannot do better than quote them.*

"The human body," they say, "though doubtless in many of its aspects something more than a mere machine, resembles the steam-engine in two respects. It calls for a constant supply of fuel, and as a result of doing work it suffers wear and tear. The body must burn fuel in order that the heat which it is always giving off may be continuously replaced; and it must burn still more fuel whenever it does work. From this necessity there is no escape. The body must also undergo repair, and if it is to remain

* See "Food Economy in War Time," by T. B. Wood, M.A., and F. G. Hopkins, M.A., F.R.S. Cambridge University Press, 1915. 6d.

healthy, its repair must keep pace with the wear and tear which it daily suffers.

"It is, of course, the food eaten which provides these fundamental needs of the body; and if we are to understand properly the nutrition of mankind, we must bear in mind the two distinct functions of food—its function as fuel and its function as repair material. Obviously when we are considering the nutrition, not of the adult but of the young, we must remember that something more is required of the food: it must supply material for growth and increase. . . .

"Some people may vaguely feel that the nutrition of complex living creatures must involve factors which are too subtle for measurement. They may cherish a doubt whether the needs of the human body can be definitely expressed in pounds and ounces or other such units.

"But there is no vagueness about our knowledge of the requirements of the body in respect of fuel. With suitable apparatus it is possible to measure with accuracy the total heat lost by

the body of any individual in a given time. If the individual is doing work, we can also measure, or calculate, the equivalent of that work in the form of extra heat lost by the body. Such measurements have been repeatedly made, with consistent results, upon individuals who during the investigation were resting, working moderately, or doing heavy work. It is clear that the least quantity of food which will serve the body under these various circumstances is that which will supply fuel to cover the loss of heat and the work-power expended. If loss is supplied, the body burns its own tissues and suffers loss of weight. How exactly are we to decide on accurate lines how much and what kind of food will contain the requisite value as fuel to prevent such loss ?

" In the first place, we can burn the foodstuffs outside the body, treating them thus as actual fuel, and with proper apparatus determine exactly how much heat each kind of food will give out when completely burnt. This, of course,

is a perfectly constant quantity for a given food, but varies greatly with different foodstuffs. A given weight of fat, for instance, gives out more than twice the heat yielded by the same weight of sugar or starch.

"Now when, in carefully conducted experiments, we are measuring the total heat lost by the body and the heat value of the work it is doing, we can, at the same time, exactly determine the amount and kind of materials which are being burnt in the body. On these lines we have arrived at the very important knowledge that food material burnt in the body produces just that amount of heat which it yields when burnt as actual fuel in a fire grate or boiler furnace. The human body, with all its subtleties, has no power of extracting more than this. This is the justification—and it is a complete justification—for the quantitative statements concerning fuel values which occur in what follows, and which appear in the tables. . . .

"When we come to deal with the growth

and repair of the body, one particular constituent of foods becomes of special importance. Nine-tenths of the solid matter of our flesh consists of protein, and in order to make flesh we must eat protein. This does not mean that we must obtain all we need in the form of animal flesh, for vegetables also contain this important material. While everybody is perfectly familiar in a general way with the nature of the other foodstuffs —fats and starches—familiarity with the nature of proteins is, perhaps, less general. It will be sufficient to remember that they are the most prominent constituents of our muscles and our blood, and are contained in all tissues, animal or vegetable, that are living or have lived. What should, at any rate, be clearly understood is that they form highly necessary constituents of our diet. It is not enough, as has already been pointed out, to supply the body with fuel; the diet must at the same time contain enough protein for maintaining the repair of the working organs."

*Quantity required.*

At one time the quantity of food required for the maintenance of physical efficiency was stated in terms of protein, fat, and carbohydrates; but lately science has shown that all three are more or less interchangeable in the economy of the human body. It is simpler, therefore, to state the quantity of food required in terms of protein and potential energy. As already shown, the protein must be stated separately, as a certain amount is requisite in every diet for building up muscle and tissue. But given this quota of protein for building purposes, it becomes a matter of indifference, within certain limits, whether the potential energy required is obtained from further protein, from fats, or from carbohydrates. The potential energy of food is usually stated in heat units or calories, the "larger calorie," which is the amount of heat required to raise 1 kilogram of water 1° C. (or 1 lb. of water 4° F.), being the one generally adopted. In thus expressing

the potential energy of food it is not, of course, implied that all that energy takes the form of heat, but only that if it *were* converted into heat a certain number of calories or heat units would be generated. Experiments have shown that—

1 gram of protein yields 4·1 calories.
1 gram of fat yields 9·3 calories.
1 gram of carbohydrates yields 4·1 calories.

Let us now inquire what number of calories of fuel energy and what weight of protein must be provided in order to maintain physical efficiency. We have seen that the quantities vary with the amount of muscular work performed; but as it is obviously impossible to lay down a standard which is exactly right for every one, it is usual to classify food requirements roughly according to whether the work is light, moderate, or hard.

We will discuss later which of these standards should be adopted in arriving at the cost of living for different classes of the community. When

I investigated the question nearly twenty years ago, I came to the conclusion, after examining the best available evidence and consulting with expert physiologists, that men engaged on "moderate" work required 125 grams of protein and 3,500 calories of fuel energy per day, and based my estimate of the cost of living on this foundation.* So much work has, however, been done on the subject of dietetics during the last twenty years, that we must review the whole subject, and see whether modern investigations suggest any modification of the above figures. Particularly is it desirable to examine with care the investigations recently made by Chittenden † in America and Hindhede in Denmark, both of whom came to the conclusion that physical efficiency can be satisfactorily maintained on a much lower dietary, especially as regards protein, than was generally considered necessary.

On reading the most recent literature dealing

* "Poverty: A Study of Town Life," by B. Seebohm Rowntree. Nelson. 1s. 3d.

† See Appendix C, p. 148.

with investigations undertaken in America, England, Germany, Denmark, Japan, Sweden, and elsewhere, I find that the great majority of physiologists are still of the opinion that, in order to maintain physical efficiency, a diet must provide men engaged in work which I would here classify as moderate with approximately 3,500 calories of fuel energy. Modern research, however, tends to show that the amount of protein contained in the dietary may be placed at 115 instead of 125 grams. The amount would, of course, be less for those engaged on light work, more for those engaged on hard work, and very much more if the work were very hard. As stated, however, there are now a few physiologists who believe that men undertaking moderate muscular work can maintain physical efficiency on a much lower dietary. The differences of opinion between the two schools of physiologists are being keenly contested, and I cannot put down the arguments used on each side without dwelling on the matter at excessive length. Briefly, however, the opinion

of those who advocate a lower dietary is based on observations made for limited periods of time, on a limited number of subjects, and under conditions which were not entirely normal; whereas those who adhere to the generally accepted view regarding food requirements base their conclusions on a very much larger number of observations, often continued over very long periods of time. Their conclusions are confirmed by the experience of those responsible for victualling armies and navies, and the inmates of public institutions; and also by observations of the food actually consumed by great numbers of working people in different localities, who were free to select their dietary, but whose incomes would not allow them to tempt their palates, as the rich often do, by costly dishes. While, therefore, few scientists would refuse to admit that the subject needs further investigation, it would be quite unreasonable to suggest that the views of individual physiologists, based upon very limited inquiries, should guide the State in estab-

[1] See Appendix A.

lishing minimum wages for large classes of the community, while it rejected the verdict of the great majority of physiologists, which was supported by a great volume of practical experience.

Having now briefly reviewed the findings of modern science on the question of food requirements, let us ask what amount of calories and protein should be allowed for in fixing minimum wages. As already stated, it is usual to classify food requirements according to whether the work to be performed is light, moderate, or hard. These are, however, somewhat indefinite expressions—a fact which largely accounts for the different estimates of physiologists who would probably be in agreement as to the amount of nutriment required for work of clearly defined severity. But when, for example, they are giving their view as to food requirements for a "moderate" worker, they adopt a varying standard, some counting "moderate" work which others count "hard;" while some bear in the other direction, and count "moderate"

work which others count "light." Although it is difficult to draw hard and fast lines of demarcation between work of different degrees of severity, physiologists generally agree that a man engaged on light work (for example, a shop assistant in, say, a jeweller's shop) requires about 90 grams of protein and 2,500 calories of fuel energy, while a man engaged on hard work requires about 140 grams of protein and 4,500 calories of fuel energy. Hard work may here be taken to imply, not the most severe work of which man is capable, but such work as that performed by a navvy, a blacksmith, a stoker, or a coal-hewer. Men engaged on exceptionally hard work, such as lumbermen, who are likewise exposed to all kinds of weather, require very much more than this—up to 180 grams of protein and 6,400 calories of fuel energy.

Having laid down the requirements of light and of hard work, it becomes a matter of judgment at what point between them the requirements for any particular class of work should be

placed. Work falling exactly half-way between the two would require 115 grams of protein and 3,500 calories of fuel energy; and I am convinced, after careful investigation of the recent literature upon the subject, that we could not take a standard approximating more accurately than this to the needs of the great majority of the unskilled labouring classes. We are seeking to state the food requirements of those on whose behalf it may be necessary to fix minimum wages which will maintain them in a state of physical efficiency. We are therefore concerned not with those who, like many artisans, are engaged on comparatively light work, but with those who, like nearly all labourers, have to perform work requiring much muscular exertion.

Let us consider who they are and what is the character of their work. We will begin with the great class of agricultural labourers. No one will dispute that they have a large amount of heavy work to do, such as ploughing, ditching, spreading manure, hoeing, digging, hay-making,

and harvesting. It must also be remembered that their hours are long, and they are exposed to all kinds of weather, while often they have to walk considerable distances from their houses to their work. Of course some of the work which agricultural labourers are called upon to do is fairly light. On the whole, however, I shall certainly not be accused of overstating its severity if I place it half-way between that of the light and that of the hard worker.

This holds good of dockers, who trudge about all day carrying loads; of carters, who, it must be remembered, have to load and unload their carts, which is often very severe work. Or take bricklayers' labourers—a very large class. These men have to do such heavy work as mixing concrete; they are climbing up and down ladders carrying pails of mortar, or with hods of bricks upon their heads; they have to dig, often in stiff clay, to prepare foundations and lay drains. When we come to the factory, work, of course, varies enormously in severity, and doubtless some

of it, such as that of a lift attendant or a machine minder, approximates more closely to "light" than to "hard" work. But, on the other hand, a great deal of it should really be classified as hard. Take, for instance, the work of blacksmiths' strikers, chain makers, boiler firemen, and the great multitudes of men who are carrying heavy loads, unloading raw materials, etc. Thus, on reviewing the whole field of unskilled labour, I feel that in placing it half-way, as regards severity, between light work and hard work, and in estimating the food requirements of the workers as 115 grams of protein and 3,500 calories of fuel energy per day, I am erring, if at all, on the side of moderation. To adopt a lower estimate would be to understate deliberately the claims of physical efficiency.

I admit that I am dealing with the matter in very rough terms, but I think the right course to adopt is to take unskilled labourers as a whole, and leave it to any particular Trade Board to make modifications either up or down if evidence

could be brought forward which would justify such a course.* Whether this could be done or not would depend upon the particular industry for which wages were being fixed. I very much doubt, however, whether, in fact, there is any industry in which the proportion of men whose work could be considered as less than moderate would be sufficiently large to justify any reduction in the standard. The physical exercise involved in travelling between home and work must always be borne in mind. Although not paid for in wages, nor ordinarily counted as part of the day's work, the wear and tear of the body must be made good, and this can only be done by food consumed.

One other very important point must be remembered in fixing the food requirements of a class. When fixing the wages for a man it must

* For purposes of brevity I shall in future refer to work coming half-way between "light" and "hard" as "moderate" work; but, as already explained, it does not follow that this definition of the term "moderate" coincides exactly with the definition used by other writers on the subject.

be remembered that they must be such as will enable him to maintain a family during the years when the children are dependent on his earnings. Now, the work of his wife cannot be regarded as of less than moderate severity, and would often be more correctly defined as hard. In addition to the bearing of children, she has the whole of the housework to perform, the scrubbing and cleaning, the washing, and the cooking; and, as regards hours, it is notorious that she works, as she would put it, "all hours God sends." Remember, too, that we are dealing with the labouring classes, where the families are, as a rule, larger than among the skilled workers, and the work of the mother is correspondingly harder. The children of these classes are constantly "knocking about;" they have no tempting nurseries to keep them at home, and they often sleep less than the children of the well-to-do. I do not think we should be wise in putting the food requirements of the wives and children of the labouring class, any

more than those of the men, at less than is needed by moderate workers.

Even supposing, then, that the work of a machine-minder were less than moderate, his wages must suffice to maintain his family in physical efficiency, and possibly in such cases the work of the wife is more severe than that of her husband. This argument, of course, must also be borne in mind when fixing a suitable diet for men engaged on very heavy work. It would not be reasonable to demand that because the man was thus occupied the whole family should receive a correspondingly ample diet. This is another argument in favour of taking the food requirements of men engaged in moderate work as being suitable for the labouring classes as a whole, and for assuming the requirements of moderate work to be half-way between those of light and hard work.

Up to the present I have only supported my estimate of the amount of nutriment required for the maintenance of physical efficiency by the

statement that it is based upon the views held by the great majority of physiologists. But it will be worth while to dwell at greater length on the arguments in favour of those views. In the first place, they are supported by the experience of those responsible for the victualling of armies and navies and public institutions. In this connection the following evidence may be adduced.

### Experience in the British Army.

#### 1. *Observations made during Two Experimental Marches.*

In 1909 and 1910 two experimental marches were carried out, under orders of the Army Council, for the purpose of deciding on a satisfactory scale for a field ration.

On the first march, which took place in October 1909 and occupied thirteen days, the men marched an average distance of 11½ miles a day, and the dead weight of their equipment varied from 26 to 54 lbs. Although the protein furnished in the dietary was 186 grams per man

in the first six days and 141 grams during the remainder of the march, and the calories averaged 3,465 per man per day, the report on the results of the march states: "On the whole, there was practical unanimity as to the insufficiency of the ration, the insufficiency being in the direction of fats and surplus sugars in the case of the officers, and carbohydrates in the case of the men. The march was unofficially christened 'The hunger march.'"

The Committee appointed to consider the report proposed a new field ration, allowing 4,500 calories, with an increase, if thought desirable, up to 5,000 calories.

The report on a second march, which took place in August 1910 and occupied fourteen days, when a dietary containing 207 grams of protein and 4,508 calories of fuel energy was provided in the first week, and one containing 176 grams of protein and 4,515 calories in the second week, states: "The appearance of the men at the close of the experiment was strik-

ingly different from that of the party which took part in last year's (1909) march. No man showed any signs of wasting; cheeks were not hollowed, nor did their eyes show the sunken appearance so noticeable in many cases on the first occasion."

### 2. *Sample Barrack Rations in Time of Peace.*

Before the war the food supplied in barracks was obtained from an issue in kind and from purchases made with a money allowance. The soldier also often purchased, at his own expense, a supper which generally contained meat. The Army Medical Advisory Board Committee on the physiological effects of food, etc., investigated the average food issued in kind to four British regiments, waste being included, but not food bought, and found that they contained 133 grams of protein and 3,369 calories of fuel energy.

A ration for manœuvres was worked out in 1914: this contained 151 grams of protein and 3,812 calories of fuel energy.

### 3. *Army Active Service Ration.*

The present active service ration (normal field ration) in France contains 140 grams of protein and 4,190 calories of fuel energy.

### Experience in the British Navy.

Rations in the British Navy served to men afloat vary slightly, according to the food available. Taking the average of a number of rations, I find that they furnish 113 grams of protein and 3,450 calories. A messing allowance of 4d. per day is given to each man in addition, to enable him to supplement his ration. The 4d. per day is spent in obtaining extra quantities of the Government provisions, or in purchasing other articles of food from the canteens on board H.M. ships. A daily ration of one-eighth pint of spirit, or its money equivalent, is also given to each man.

If the messing allowance of 4d. were spent on bread at York retail prices (1914), the total diet

would provide 214 grams of protein and 6,440 calories of fuel energy.

### Experience in English Prisons.

The diet provided for prisoners on remand or awaiting trial in English prisons supplies 117 grams of protein and 3,307 calories of fuel energy. These men are not working. For men in convict prisons, employed at certain prescribed forms of labour, the diet supplies 144 grams of protein and 4,120 calories of fuel energy.

### Experience in English Workhouses.

Just prior to the outbreak of war I obtained copies of the dietaries provided for able-bodied men in twelve workhouses in different parts of the country, chosen at random, and found that on the average these contained 125 grams of protein and 3,290 calories of fuel energy. In some workhouses able-bodied men who are asked to undertake work harder than the ordinary

house-cleaning and similar duties, receive an additional meal each day. In one workhouse investigated the nutritive value of this meal was found to amount to 53 grams of protein and 1,260 calories of fuel energy. My investigator was present whilst dinner was being served in one of the workhouses, and he states that the men, without exception, ate their food with a keen relish. There was no waste; the plates were emptied to the minutest particle of food.

### Experience in an English Labour Colony.

In the early months of 1914 I obtained a copy of the dietary supplied to the men at the Hollesley Bay Labour Colony for London's unemployed men, and found that the food consumed by the men in residence, who were engaged on market gardening and field work, contained 145 grams of protein and 3,948 calories of fuel energy per man per day.

The work generally performed by the men at

this institution is, if anything, a shade heavier, taking one season with another, than that usually performed by ordinary agricultural labourers, as it includes a good deal of spade-digging.

An officer of the institution who had observed the men during a period of two and a half years informed me that he did not consider the dietary provided was "in the slightest degree extravagant."

### Experience of the Japanese Navy.

Extensive investigations into the food requirements of sailors have been made by the Medical Bureau of the Japanese navy, in their efforts to eliminate the disease of beri-beri, which affected a large proportion of the men in the navy.

A battleship was detailed to make a long voyage, and a dietary study was made of the food consumed by the sailors, sub-officers, and officers. On this voyage the prevalence of beri-beri was very noticeable among the mariners, but only two cases occurred amongst the better-

fed officers. At the end of the voyage a commission was formed which investigated the problem thoroughly, and which recommended that the food of the sailors should include a much larger proportion of protein, and also that improved sanitary conditions should be insisted upon. The next step was the passing of the Naval Food Supply Act, as a result of which the diet of the Japanese sailors, which formerly supplied 91 grams of protein per day, now supplies 155 grams of protein. This certainly exceeds the average supply of protein in the food of the normal Englishman, though the latter is taller and heavier than the normal Japanese.

Another battleship then made a voyage over exactly the same route as the first, but with improved sanitary conditions and adopting the new dietary. On this voyage the proportion of cases of beri-beri was very low, and the Commission had no doubt that the more ample dietary counted for at least as much as the

better sanitary conditions in improving the health of the men.

A perusal of the foregoing facts, confirming as they do the opinion of most physiologists, will, I think, convince the reader that the standard I lay down for the food requirements of the labouring class—namely, 115 grams of protein and 3,500 calories of fuel energy per man per day—is not excessive. It seems to me that we must accept one of two alternatives: either the food supplied in prisons and workhouses, and to armies and navies, is grossly in excess of requirements, and thus millions of money are being wasted every year; or an equally liberal diet should be provided for the ordinary civilian engaged in work of equal severity.

Now we pass to other facts in support of my contention regarding the amount of nutriment necessary for efficiency. I refer to the dietaries which are actually selected by working people. With a view to throwing light on this subject, I made, in the spring of 1915, a very careful

investigation into the food consumed by thirty families. The investigation covered a period of three weeks, except in seven cases where special circumstances made this impossible, and was undertaken by an investigator with much previous experience in inquiries of this nature. I am satisfied, therefore, that the information obtained is reliable. The families selected were those of men whose average wages during the period they were under observation varied from 28s. to 48s. per week, the average being 37s. 3d. The total family incomes varied from 32s. to 66s., with 43s. 2d. as the average. My object was to choose families who could afford to buy what food was necessary, but not to eat for the sake of eating.* It will be remembered that in April 1915 wages had not risen very much since the outbreak of war, but the cost of food had risen by about 24 per cent. above the level of July 1914. Thus, housewives were becoming anxious about the food expenditure, there was a tendency

* See note to Appendix D, p. 151.

to economize, and we may reasonably assume that the selected families regarded the amount of food purchased as essential.

The details disclosed by the investigation will be found on page 150, from which it will be seen that on the average the food actually consumed by these families contained 115·6 grams of protein and 3,790 calories of fuel energy per man per day, which equals in protein and is a little higher in fuel energy than the standard which I suggest for adoption in fixing the minimum wage. Seventeen of the families received a higher allowance of protein than the standard 115 grams, which I lay down as being necessary for labourers, and twenty-one of the dietaries supplied a greater number of calories of fuel energy than the standard 3,500. The family (1) whose dietary supplied the lowest amount of nutriment were very much undersized and puny.

Further evidence, based upon the observation of what is actually eaten by people free to choose their food within certain limits,

has been obtained by physiologists all over the world.

### Evidence furnished by Professor Francis Gane Benedict, of the Wesleyan University, Middleton, Conn., U.S.A.*

Professor Benedict says :—

"Dietary studies made in England, France, Italy, and Russia show that a moderately liberal quantity of protein is demanded by communities occupying leading positions in the world. This, contrary to popular impression, is true also of the Japanese, for the better class select diets with relatively liberal supplies of protein in proportion to the body weight. Dietary studies with Chinese on the Pacific coast show the same fact. . . .

"From the results of numerous dietary studies made with different classes of people living under different conditions it has been

* *The American Journal of Physiology*, Vol. XVI. (Aug. 1906), No. 17.

observed that, whatever may be true of a few individuals, with communities a generally low condition of mental and physical efficiency, thrift, and commercial success is coincident with a low proportion of protein in the diet. The negro and poor white of the south, the Italian labourer of Southern Italy, all partake of diets relatively low in protein. That their sociological condition and commercial enterprise are on a par with their diet no one doubts."

The conviction has been expressed " that the proportion of protein in a diet is one of the greatest determining factors in the productive capacity of a nation." " Furthermore, it seems clearly established that when people accustomed to a low protein diet are fed on a higher protein plane, as is the case when southern Italians come to America, their productive power increases markedly."

### Other Evidence.

The very careful investigations of Drs. Hultgren and Landergren have shown that the labourer in Sweden, with an average body weight of 70·3 kilos (11 stone 1 lb.), with optional diet, consumes, when on moderate work, 134 grams of protein and 3,425 calories of fuel energy.

Professor Dr. Max Rübner has stated :—

"On consideration of a large number of empirical working-class dietaries, which have been recorded in increasing numbers during recent times, I find the quantity of food corresponds to 3,000 to 3,600 calories, or a mean of 3,270 calories per day, containing 131 grams of protein. This is the mean of the cases cited by fourteen authors. There are, however, men with a calorific intake far exceeding 3,300 to 3,600, and with a corresponding increase in the protein contents. We are justified in taking the above energy value as the average requirements for day labourers, bricklayers, etc."

Only those who are familiar with the literature of dietetics have learned to think of food requirements in terms of protein and calories of fuel energy, and it is not easy for others to form an idea of the amount of food actually represented by a dietary containing 115 grams of protein and 3,500 calories of fuel energy per man per day. In order to furnish a standard to enable them to do so, I obtained particulars of the meals provided in a West End club in 1914. The steward of the club who furnished the information is a man of much experience, and he assures me that the sample meals which he has given do not in any way overstate the amount of food consumed by the ordinary member. He said that while some eat less many eat more. I questioned him closely with regard to the exact weight provided of every item in the list, and his statement that the list was in no way exceptional was confirmed by the steward of another West End club who had had thirty years' experience, and who, on examining

the menu, declared that it was perfectly typical.

The sample menu is as follows :—

BREAKFAST.

Bacon and eggs.
Bread, butter, and marmalade.
Coffee.

LUNCHEON.

Roast beef or mutton.
Potatoes, greens.
Stewed apple and cream.
Bread, butter, and cheese.
Coffee.

DINNER.

Soup.
Fish.
Meat.
Potatoes and greens.
Ice cream.
Bread.
Butter.

The food value of this dietary works out at 202 grams of protein and 5,148 calories of fuel

energy per man per day.* The consumers of these meals are practically all of them engaged on light work, such as that of civil servants, professional men, etc. The standard which I allow for light work is 90 grams of protein and 2,500 calories of fuel energy, or less than one-half the nutriment provided in the club dietary, which is certainly far in excess of physiological needs.

Middle-class folk who are inclined to call the standard I allow in this chapter excessive for labouring people should first compare it with their own dietary.

It only remains to consider the food requirements of women and children. The quantity of

* The quantities of food were as follows (all weights refer to the food before cooking, and in the case of the meat include the usual proportion of bone):—

*Breakfast.*—2 eggs, 4 oz. bacon, 4 oz. bread, 1 oz. butter, 2 oz. jam or marmalade, 7 oz. milk (for coffee), sugar.

*Luncheon.*—8 oz. beef or mutton, 8 oz. potatoes, 8 oz. greens, 8 oz. apple, 1 oz. cream, 4 oz. bread, 2 oz. cheese, 1 oz. butter, 7 oz. milk (for coffee), sugar.

*Dinner.*—Soup (10 oz. stock), 10 oz. fish, 8 oz. meat, 4 oz. potatoes, 4 oz. greens, ice cream (3 oz. cream), 2 oz. bread, 1 oz. butter [sugar (per day), 2 oz.].

food necessary for an individual varies not only according to the body weight and the severity of the work done, but also with age and sex. Physiologists agree that a woman, as a rule, requires less food than a man, and the amount required by children, though varying with the age, is, generally speaking, less. The equivalents which have been commonly adopted in expressing the diet required by persons of different age and sex, taking the food of a man as the unit, are as follows :—

A woman requires $\frac{8}{10}$ths the food of a man.

A boy fourteen to sixteen years of age requires $\frac{8}{10}$ths the food of a man.

A girl fourteen to sixteen years of age requires $\frac{7}{10}$ths the food of a man.

A child ten to thirteen years of age requires $\frac{6}{10}$ths the food of a man.

A child six to nine years of age requires $\frac{5}{10}$ths the food of a man.

A child two to five years of age requires $\frac{4}{10}$ths the food of a man.

A child under two years of age requires $\frac{3}{10}$ths the food of a man.

If we estimate the needs of children dependent on the father as amounting on the average to one-half those of a man, we shall not be overstating the facts. Indeed, it is possible that we are understating them, for careful recent work in America seems to show that the food requirements of boys of about thirteen are higher than was supposed. As, however, this view is not yet fully established, I think it well to adhere to the estimates of food requirements for children which have been generally adopted in the past.

I therefore take the following standard as representing the amount of food necessary for unskilled workers and their families :—

| | Protein (grams). | Fuel energy (calories). |
|---|---|---|
| Men . . . . . | 115 | 3,500 |
| Women . . . . . | 92 | 2,800 |
| Children (under 14). . | 57½ | 1,750 |

In the following chapter I translate protein and calories into an actual dietary, and give its cost.

## CHAPTER III.

### DIETARY.

In the previous chapter I stated the amount of nutriment necessary for the maintenance of physical efficiency in terms of protein and calories; in this chapter I translate this nutriment into a dietary. Its selection opened out an infinite number of possibilities, but there was little room for doubt as to the general principles involved. I think it will be admitted that the choice of a dietary should be guided by considerations of the greatest possible economy commensurate with due regard to national customs. These customs are largely based on physical needs, which in their turn depend largely on the climate. For instance, the Bengali can live on a diet consisting mainly of rice, because

the climate is so hot that he has little need to use heat-producing foods, and he works in a very leisurely way, and makes but little demand on his food for repair of body tissue. On the other hand, the Eskimo lives very largely on the fats of seals and whales; for, living as he does amid intense cold, he requires a heat-producing diet.

In this country almost every one takes a mixed diet—even the poorest try to get a certain amount of meat; and though undoubtedly health can be maintained without it, we cannot, in selecting our dietary, ignore the fact that meat-eating is an almost universal custom. So is the drinking of tea and coffee, and though these do not actually supply any nutriment, a certain amount must be included in the dietary. On the other hand, I think we might reasonably exclude alcoholic beverages, but should bear in mind possible expenditure upon them when considering the amount to be allowed for personal sundries.

Working in accordance with the above principles, I have selected a dietary on which to base the cost of living, as shown on page 92.

I do not think that this dietary can be called extravagant. Indeed, I think that in selecting it I have erred, if at all, on the side of economy; for the only butcher's meat which I allow for is shin beef, liver, scrag end of mutton, breast of mutton, and scrap beef. My Labour friends may criticise me for selecting such cheap cuts, and I can only urge in self-defence—first, that I am here seeking to provide not for a standard of life which I consider desirable, but for one below which no class of workers should ever be forced to live; and, second, that the minimum wage that I recommend assumes, in the case of men, a certain number of dependent children. As soon as the children begin to earn the pressure on the family exchequer is lessened, and a less stringent dietary can be adopted.

In July 1914 the cost of this dietary amounted

## DIETARY.

| | Breakfast. | Dinner. | Tea. | Supper. |
|---|---|---|---|---|
| Sunday . | Tea, bacon, bread and dripping or margarine (or fried bread). | Stewed breast of mutton, with savoury balls, potatoes. | Tea, toasted teacakes, and margarine. | Hot milk (skimmed), bread and margarine or dripping, cheese. |
| Monday . | Porridge and treacle, tea, bread and dripping or margarine, bacon. | Barley broth, boiled meat and potatoes. | Tea, bread and margarine, jam. | Brown bread and margarine or dripping, cheese, cocoa and milk (skimmed). |
| Tuesday . | Porridge and milk (skimmed), tea, bread and dripping or margarine (or fried bread). | Broth reheated with dumplings, and bread. | Tea, brown bread and margarine, treacle. | Cocoa, bread and margarine or dripping, cheese. |
| Wednesday . | Porridge and treacle, tea, bread and dripping or margarine, bacon. | Stewed liver green peas (marrowfats), mashed potatoes. | Tea, currant bread and margarine. | Cocoa, milk, bread, dripping, grilled herrings (2). |
| Thursday | Porridge and treacle, tea, bread and dripping (or fried bread). | Irish stew, rice and currant pudding (for children). | Tea, brown bread and margarine, treacle. | Bread and margarine or dripping, cheese, cocoa (half skimmed milk). |
| Friday . | Tea, bread and dripping or margarine, bacon. | Lentil soup, fig pudding. | Tea, currant bread and margarine. | Cocoa, brown bread, stewed tripe and onions. |
| Saturday | Tea, bread and dripping or margarine, fried or baked herrings (3). | Boiled meat pudding, potatoes. | Tea, bread and margarine, jam. | Cocoa, brown bread, baked onions. |

to 4s. 4d. per man per week, the prices of the foodstuffs at that time being :—

| | *s.* | *d.* | |
|---|---|---|---|
| Oatmeal | 0 | 2½ | per lb. |
| Flour | 1 | 6 | per stone. |
| Wheaten flour | 1 | 7 | „ |
| Treacle | 0 | 2½ | per lb. |
| Jam | 0 | 6 | „ |
| Sugar | 0 | 2 | „ |
| Potatoes | 0 | 8 | per stone. |
| Barley | 0 | 3 | per lb. |
| Rice | 0 | 2 | „ |
| Lentils | 0 | 3 | „ |
| Green peas | 0 | 3 | „ |
| Onions | 0 | 1 | „ |
| Figs (cooking) | 0 | 4 | „ |
| Currants | 0 | 4 | „ |
| Tea | 1 | 4 | „ |
| Cocoa essence | 0 | 10 | „ |
| Liver | 0 | 6 | „ |
| Shin of beef | 0 | 7 | „ |
| Breast of mutton | 0 | 6 | „ |
| Scrag end of mutton | 0 | 5½ | „ |
| Scrap beef | 0 | 5½ | „ |
| Tripe | 0 | 6 | „ |
| Bacon | 0 | 9 | „ |
| Cheese | 0 | 9 | „ |

| | s. | d. | |
|---|---|---|---|
| Skim milk . . . . . | 0 | 2 | per quart. |
| Herrings . . . . . | 0 | 1½ | per pair. |
| Dripping . . . . . | 0 | 6 | per lb. |

Let us see how this compares with the cost of dietaries provided in workhouses, prisons, and to British sailors and soldiers.

Assuming the prices of raw materials used in the dietaries referred to above to have been the same as the retail prices which ruled in York in July 1914, the average cost per man per week (on the basis of each man receiving a dietary which furnished 115 grams of protein and 3,500 calories of fuel energy) works out as follows :—

| Dietary provided to— | Cost per man per week at retail prices. | |
|---|---|---|
| | Protein (115 grams). | Fuel energy (3,500 calories). |
| | s. d. | s. d. |
| Male convicts, employed at certain prescribed forms of labour | 4 0 | 4 6 |
| Able-bodied men in workhouses . | 4 3 | 4 9 |
| Men employed at Hollesley Bay Labour Colony . . . . . | 4 8 | 5 2 |
| Soldiers in barracks . . . . | 5 10 | 6 0 |
| Sailors afloat . . . . . | 7 2 | 7 2 |
| 30 York working-class families . | 5 7½ | 5 2 |
| STANDARD DIETARY . . . . | 4 4 | 4 4 |

## CHAPTER IV.

### HOUSING.

We need not long discuss the necessary expenditure upon housing, for as regards this item there will be but little difference of opinion. If physical efficiency is to be maintained, houses must be dry, well-drained, and capable of being properly heated. They must be so constructed that they may receive an adequate supply of fresh air and sunlight, and they must not be overcrowded. These conditions may be fulfilled in an infinite number of ways, and fortunately the standard of housing requirements is steadily rising. Public opinion is beginning to protest against the long, unlovely rows of "cages for factory hands," crowded forty to the acre, and to demand properly planned building estates,

with fewer houses to the acre and more taste shown in their design.

But here we are concerned, not with the ideal house, but with one which will meet the needs of physical efficiency as economically as possible. Such a house must provide a fair-sized living-room, a small scullery-kitchen, preferably with a bath in it, and three bedrooms. Some critics may say that three bedrooms should not be insisted upon when stating minimum requirements. I entirely disagree. Even when there are only two children, if they are boy and girl, the need for three bedrooms will arise as soon as they come to a certain age. But the majority of families pass through a longer or shorter period when there are three or more children dependent on the earnings of the father, and so we must allow for at least five persons when calculating housing requirements. It cannot seriously be argued that, for a family of five or more, physical efficiency can be secured, along with common decency, if less than three bedrooms are pro-

vided. Doubtless a large proportion of existing working-class cottages have not three bedrooms, but neither do they supply the accommodation necessary for physical efficiency. Indeed, the amount of ill-health and mortality due to overcrowding is notorious.

Looking at the question from another angle, it may be argued that a parlour should be included in the minimum requirements. In this connection customs differ locally, but from the standpoint of cost the addition is a matter of comparatively small moment. It would not greatly increase the superficial area of the house; for in the smallest parlour-houses the tiny extra room is subtracted, as it were, from the living-room and scullery.

Coming now to the question of rent. In the country a suitable house might be secured for 1s. 6d. or 2s. a week, while in certain parts of London, which are still occupied by the working-classes, similar accommodation might cost 15s. or £1. Leaving extremes out of account, how-

ever, it may be said that the rent would be somewhere about 6s. a week, including rates, in towns, and perhaps 2s. 6d. in the country.

The predominant range of weekly rents (including rates) was ascertained by the Board of Trade in connection with an inquiry into the cost of living of the working-classes in eighty-eight towns, in May 1912.* Although the variations in rents in different towns are very marked, the *predominant* range in the case of four-roomed and five-roomed dwellings—which are the most common—is not very wide, as will be seen from the following table :—

| No. of rooms per dwelling. | No. of towns to which the figures relate. | Predominant range of weekly rents. |
|---|---|---|
| | | *s. d.* *s. d.* |
| 2 | 31 | 2 6 to 3 9 |
| 3 | 57 | 3 9 to 5 0 |
| 4 | 80 | 4 6 to 5 9 |
| 5 | 71 | 5 6 to 6 6 |
| 6 | 29 | 6 9 to 8 0 |

The corresponding rents in London (Middle Zone) are from 40 to 44 per cent. higher; but

* Cd. 6955, 1913, p. xxv.

in Birkenhead, Croydon, Huddersfield, Jarrow, Newcastle-on-Tyne, Plymouth and Devonport, Southampton, South Shields, and Swansea, rents amount to between 70 and 84 per cent. of those in London.*

These figures refer to 1912, and rents had risen somewhat in 1914, and will doubtless rise considerably when the Increase of Rent and Mortgage Interest (War Restrictions) Act, 1915, is rescinded.

In the estimate of the cost of living in 1914 adopted in this volume I allow 6s. for rent. But though rents vary widely from place to place, it is never difficult to ascertain the normal rent in any given neighbourhood, and consequently, in arriving at the local cost of living, a suitable figure can easily be fixed. In this chapter I merely wish to emphasize the kind and size of house to be allowed for in fixing the local rent.

* See "Report of the Land Enquiry Committee," Vol. II. Urban. Hodder and Stoughton. 1s.

## CHAPTER V.

### CLOTHING, FUEL, AND SUNDRIES.

*Expenditure on Clothing.*

My purpose in this section is to arrive at the minimum sum which a working-class family must spend on such clothing as is necessary to keep the body warm and dry, and to maintain a modest respectability. With a view to obtaining accurate information, I made inquiries among a large number of men and women who knew from first-hand experience at how low a cost it was possible to clothe a family. If we rule out certain estimates which were very much higher or very much lower than the rest, the great majority of the replies vary within narrow limits. For instance, of twelve replies referring to men's clothing, the estimates only

vary between 1s. 5½d. and 2s., the average being 1s. 9d.* Of eight replies about women's clothing the estimates vary between 10d. and 1s. 4½d., the average being 1s.* I obtained twenty estimates regarding children's clothing, which naturally varied slightly according to age, but they pointed pretty generally to the conclusion that in making an all-round estimate of 9d. per week for children we should be very near the truth.

Thus we arrive at a figure of 1s. 9d. per week for men, 1s. for women, and 9d. each for children, or 5s. a week for a family of five.

I have made no allowance for any gifts of old clothing which may be received. In fixing minimum wages we have no right to assume charitable gifts, which at the best are exceedingly precarious; and, moreover, it is becoming increasingly usual for well-to-do families to dispose of their old clothes to second-hand dealers instead of giving them away.

* See Appendix E, p. 152.

### *Fuel.*

In estimating the necessary cost for fuel, I have assumed that there is only one fire in the house, which is used both for heating the living-room and for cooking. I have ascertained from a number of working-people how much coal they actually consume, and their replies confirm the information supplied to me on the same subject twenty years ago, when I was writing on "Poverty" in York. Taking summer and winter together, the average amount of coal consumed is 1½ bags of ten stones each. In 1914 the price of coal averaged 1s. 8d. a bag, thus giving a weekly expenditure of 2s. 6d. In some households gas is used in the summer instead of coal; but though this method is convenient, it effects practically no financial saving, and may here be disregarded.

### *Household Sundries.*

Under the heading of household sundries are included such items as lighting, washing materials,

and repairs and breakages. Information regarding them was obtained, as in the case of clothing and fuel, by questioning a number of working-class women. Their replies varied within very narrow limits, and we shall be within the mark if we take 1s. 8d. per week as the necessary expenditure under this heading for a family of five persons.

### *Personal Sundries.*

In the matter of expenditure upon personal sundries I was forced to rely largely upon my own judgment, since it was far less easy to fix a standard in considering such items as recreation and education than in the case of clothing and fuel.

Certain personal expenses, however, are quite necessary—for instance, 4d. a week for compulsory National Health Insurance. Trade Union subscriptions, or additional subscriptions to sick clubs, may almost be regarded as necessary, and

this frequently holds good of tram fares to and from work.

After these claims, which may easily amount to 2s. or 2s. 6d. a week, have been met, there are a number of others varying in their urgency—such as expenditure for newspapers, for incidental travelling, for recreation, for occasional presents to the children, for beer and tobacco, subscriptions to church or chapel, burial and sick clubs for wife and children, and the multitude of small sundries such as stamps, writing materials, hair-cutting, drugs, etc.—for which it is difficult to make an accurate estimate, but some outlay upon which it is impossible to avoid.

Taking all these items into consideration, I came to the conclusion that we cannot possibly allow a sum of less than 5s. a week for a family of, say, five persons. I do not think we can regard the necessary sum under this heading as varying in exact proportion to the size of the family, as in the case of food and clothing. A

large proportion of it is normally expended by the father on, for example, sick clubs, trade unions, and travelling to and from work. It may be desirable that the difference between the cost of these items and the sum allowed should be increased in the case of larger families, but it is not absolutely essential; and as our aim is to arrive at the sum which it is necessary to allow for minimum wages, I think we must be content to regard 5s. as a fixed amount for all families, large or small.

## CHAPTER VI.

### WOMEN'S WAGES.

I NOW pass to the consideration of the minimum wage for women, endeavouring to ascertain, as in the case of men, the sum required to meet reasonable human needs. I do not here discuss a woman's right to demand pay equal to that of men if engaged upon similar work, such as that of a teacher or clerk, or the economic value of the services rendered by women, but confine myself strictly to the question of minimum wages. When dealing with the level of these for men, we arrived at the conclusion that an adult man's wage should be sufficient to enable him to maintain a family of at least five persons, and we must now ask whether the minimum wage for women should include some allowance for the

maintenance of dependants. The question is of great importance, and should be examined carefully. In seeking to answer it, we require to ask, first, what proportion of women have to support dependants; and, second, why they have to do so. Widely varying views on these subjects are expressed by different writers and speakers, but statistics regarding the extent to which women workers are actually responsible for the maintenance of others are both slender and unconvincing. The only serious attempt within my knowledge to collect information on the subject in this country was made by the Fabian Women's Group.* But this branch of social investigation is beset by many difficulties, and careful scrutiny of the methods adopted in the above inquiry suggests that the results obtained must be received with extreme caution. No definition was given in the inquiry schedule as to precisely what was meant by "partially

* "Wage-earning Women and their Dependants." The Fabian Society, 25 Tothill Street, Westminster. 1s. net. (November 1915.]

maintaining a dependant," and different interpretations would inevitably be given to these words by those who responded to the *questionnaire*. For instance, assume the case of a girl earning 35s. a week, whose father is a labourer earning 35s., and who has brothers and sisters, all earning wages. She pays her mother 18s. for board and lodging, although she could obtain these elsewhere for 14s. Is such a girl to be regarded as "partially maintaining" other members of the family?

Again, assume a family composed of a mother and three daughters. The three daughters are all earning, and their combined contributions to the home constitute its total income. Is each of them to be regarded as "partially maintaining" the mother? Obviously we may say, "Yes." Or we may say, "No; the girls are only paying their mother to keep house for them." The answer does not depend altogether upon the amount which they contribute, because they may choose, if they are earning good money, to live

well, and indeed better than they would do if they boarded with the ordinary working-class family, paying the customary charge for board and lodging.

These illustrations, and many others which might be given, show that it is not at all easy to say whether a girl or a woman is or is not partially maintaining some one besides herself. But unless some clear definition is given of what is to be regarded as partial responsibility for the maintenance of another person, the value of any investigation must be very uncertain.

In the inquiry made by the Fabian Women's Group no such definition was given. Question 3 in their *questionnaire* was worded as follows :—

Do you make any contribution whatsoever to—

(*a*) The support of any other person ? (State if child or adult.)

(*b*) The upkeep of any household, over and above the cost of your own board and lodging ?

The question was presumably to be answered either "yes" or "no;" but voluntary gifts or contributions, even if made infrequently or at irregular intervals, would justify the answer "yes," and their donor would be classified as "partially responsible for maintaining a dependant." Again, the inquiry dealt primarily with women and girls who were engaged in professions. Thus, out of 2,830 replies received, 1,295 were from teachers, 69 from actresses, 8 from doctors, 10 from artists, 89 from civil servants, 108 from sick nurses, 242 from domestic servants, and only 710 from industrial workers.

In view of the above facts, we should not be justified in regarding the results published by the Fabian Women's Group as indicating even roughly the proportion of women *industrial workers* who are wholly or partially responsible for the maintenance of dependants.

In the absence of definite information, I myself made an investigation on a small scale in

1917 and 1918. It covered 516 organized workers taken quite at random, detailed inquiries being made in each case. Although the number is too small to justify me in claiming that the results arrived at may be accepted as typical for the country as a whole, they may give some general indication of the probable facts.

The following information was sought in every case, and although the whole of it was not everywhere obtained, the investigator was able to ascertain with accuracy whether the worker had, either partially or entirely, to maintain others out of her earnings :—

(1.) Wage earned.
(2.) Whether married, single, or widow.
(3.) Whether living at home or in lodgings.
(4.) Whether both parents living.
(5.) Father's trade and wage.
(6.) Mother's earnings, if any.
(7.) Ages and wages of other members of the household.
(8.) Rent of house.

(9.) Money paid for board, lodging, and laundry.

(10.) Other payments (if any) to parents or other dependants, with particulars of dependants.

(Questions 4 to 8 were not asked of girls living in lodgings.)

In the case of soldiers' wives, account was taken of the separation allowances; and, similarly, payments by husbands engaged in civil work away from home were noted.

With a knowledge of the usual charges paid by working girls for board and lodging in different types of working-class houses, and with answers to the above questions, it was possible to ascertain quite definitely whether a worker was or was not partially or entirely responsible for the maintenance of others.

The result of the inquiry showed that out of 516 women workers investigated, all of whom were eighteen years of age or over, and the average of whose wages, including war bonus, was

28s. 11d. per week, 430, or 83·3 per cent., supported no dependants either partially or entirely, and 87, or 16·7 per cent., partially or entirely maintained others besides themselves. Of the 87—

53, or 10·27 per cent. of the 516 workers investigated, partially supported one parent.

6 wholly supported one parent.

7 partially supported two parents.

6 partially supported one adult (other than parent).

1 partially supported one child.

4 wholly supported one child.

5 partially supported two children.

2 wholly supported two children.

1 partially supported three children.

1 wholly supported four children.

1 partially supported one parent and one child.

In explanation of these figures it should be stated that women who, when earning very high wages, gave a shilling or two extra to their

parents each week, although their fathers and other members of their families were in work, were not regarded as having dependants. They stated to the investigator that the additional sum paid could cease at any time. It was entirely voluntary, and only given because they were doing very well at the moment. Of the 516 workers investigated, 455 were single, 55 married, and 6 widows. Of the 55 married women, 36 husbands were in the army or the navy, 15 employed in civil work, 2 were ill and unable to work, 1 was interned as an alien, and 1 was separated from his wife.

We see from the above figures that five out of six of the workers investigated had no dependants at all.

It is very desirable that further investigations of an intensive character should be made into the whole question. But in the light of the information at present available we should not be justified in assuming that more than a minority, probably in the neighbourhood of one-sixth of

women workers, are responsible for the complete or partial maintenance of dependants.

Where they are thus responsible it is almost invariably due to some exceptional circumstance.

In fixing minimum wages for any group of persons we must keep normal conditions in mind. We cannot attempt to legislate for a whole group on the basis of abnormal cases. It is normal for men to marry and to have to support families, and provision should accordingly be made for this when fixing their minimum wages. It is not normal for women to have to support dependants.

The case of men with large families is on quite a different footing. It really cannot be called abnormal, and if there were no large families to make up for the small ones, the effect on the birth rate would be very serious. But a woman is only called on to support dependants through some accidental cause, such as the death or illness, or unemployment, or inadequate wage of the male wage earner, or the claims of a

parent who has been unable to make adequate provision for old age. The human needs arising out of such misfortunes should most certainly be met; not, however, by raising the minimum wages of women generally, but by other forms of social legislation. These would probably include pensions for widows, the making of insurance against unemployment universal and compulsory, and greatly increasing the unemployment benefit, increased minimum wages for men, so that they could provide adequately for their dependent children, and also for their old age, etc.

Thus, in assuming that no allowance should be made for dependants when fixing the minimum wage for women, I am not dealing with men and women on different principles. It must be remembered that in my minimum wage for men I make no allowance for any accidents or misfortunes which may render the normal wage inadequate to meet the human needs of exceptional cases. There are, in the aggregate, a considerable number of these—as, for instance,

cases of crippled or invalid children who remain dependent beyond the normal age, families where the wife is an invalid and a paid helper is brought in to do her work, or where a man is partially responsible for the support of aged parents, etc. Such cases are on a par with those in which women are called on to meet abnormal needs.

If this position is accepted, then the principle on which the minimum wage for a woman worker should be determined is, I submit, as follows: That the wage should be sufficient to enable her to live in a decent dwelling, and to maintain herself in a state of full physical efficiency, with a reasonable margin for recreation and contingencies.

Let us consider in detail what sums should be allowed to cover the above items. As a rule, women workers either live at home with their parents or lodge with other families. Obviously wages must in every case be sufficient to render the worker economically independent, and there-

fore we must first take the sum necessary to secure a healthy, respectable lodging in a decent neighbourhood, where adequate food is supplied for the maintenance of physical efficiency. Undoubtedly the sums charged for board and lodgings vary from town to town, but probably we shall not be far wrong if we allow 12s. a week as an average figure in 1914. This would cover board and lodging and laundry.

Let us now inquire what sum must be allowed for clothing. When considering this question in the case of a man with a wife and three children, 5s. a week was allowed to cover the clothing of a whole household. But in the case of women workers, the great majority of whom are unmarried, an allowance at a considerably higher rate must be made. A girl rightly demands not only tidy and suitable working clothes, but garments which she can wear in the evenings and on Sundays. The question of attractive clothing may seem at first sight of small moment, but a little thought will show that a girl who can-

not afford to dress nicely will be seriously handicapped in the matter of marriage. Quite apart from vanity, she rightly and naturally desires to look her best, and her admirer or her fiancé likes to see her looking her best. Having made a number of inquiries of women familiar with the question, I think that the allowance for clothes and boots for a woman worker should not be put at less than 4s. a week on the basis of 1914 prices.

We now come to the last item in the minimum wage of women workers—namely, the allowance for recreation and contingencies. Out of this sum will come the inevitable 3d. a week for compulsory insurance (7s. 6d. weekly), and 3d. or 4d. paid to a sick club for supplementary benefits. Something should be allowed—say 2d. or 3d. per week—for a Trade Union subscription. These charges together would probably absorb the greater part of 1s. Travelling to and from work will often absorb a further 1s. or 1s. 6d. a week. Other items to be taken into considera-

tion are stamps, occasional presents, incidental travelling, and recreation. It must be remembered that a girl engaged on a monotonous repetition job in a factory, for fifty hours a week, stands in absolute need of some recreation in the evenings, and this is sure to involve outlay. Allowing for all these expenses, and for others which will suggest themselves to the reader, I think that the minimum at which the figure for recreation and contingencies can be fixed is 4s. a week.

We thus arrive at a total of £1 a week as the minimum wage for women in 1914—12s. for board and lodging, and 8s. for clothing and miscellaneous expenditure.

## CHAPTER VII.

### SUMMARY AND CONCLUSIONS.

In beginning my final chapter, let me recall the precise object with which the investigations recorded in this volume were undertaken.

My purpose was to state certain facts and considerations which would help us to decide what incomes families of different sizes should receive if they were to secure the necessaries of a healthy life. I said at the outset, and will here repeat, that a clear distinction must be drawn between the principles which should guide us in fixing minimum wages and those which should determine wages above the minimum. The former should be based on the human needs of the workers, the latter on the market value of the services rendered. An in-

dustry which cannot afford to pay a reasonable living wage is in an unhealthy condition, and every effort should be made to give it fresh vitality.

The questions which are discussed in the preceding chapters and the answers to which I propose to summarize are three :—

(1.) What are the human needs of labour ?

(2.) At what cost can they be supplied ?

(3.) Can industry afford to bear this cost ? and if not, can some of it be met in any other way ?

I shall deal with men and women workers separately, taking men first.

We have considered the human needs of the workers under various headings. We must now add together the different items and the cost of providing them.

*Food.*—First taking food, since it is the largest item in the necessary expenditure of working men, we examined the latest scientific estimates of the amount of nutriment necessary to main-

tain men engaged in work of varying degrees of severity in a state of physical fitness. Although some writers on the subject hold that physical fitness can be maintained on a much smaller amount of food, the great mass of opinion is in favour of a standard which gives approximately 115 grams of protein and 3,500 calories of fuel energy per man per day, for work falling midway, as regards severity, between light work and hard work. This estimate, arrived at by scientific experiment, is strongly supported by two facts :—

First, those responsible for the victualling of armies and navies, and the inmates of prisons, workhouses, and similar institutions, have found by experience that, with necessary modifications depending on the severity of the work, men must be provided with nutriment approximating very closely to the above standard.

Secondly, bodies of working people who are free to choose their food, but who are not rich enough to eat merely for the sake of eating,

consume food the dietetic value of which approximates to the same standard.

Taking all this evidence into account, and bearing in mind the kind of work done by those sections of the labouring classes on whose behalf minimum wage legislation may be enacted, I have accepted this standard—115 grams of protein and 3,500 calories of fuel energy—as the lowest which it is safe to adopt.

The next stage in my investigation was to translate the standard into a dietary. An infinite variety of dietaries would provide the necessary nutriment, but that which I selected was extraordinarily economical. It was as economical as the dietary provided in many workhouses and other public institutions in which expenses are strictly curtailed, although it was more varied and in some ways more attractive. We must, however, bear in mind that no family which was without an accurate knowledge of the nutriment contained in various foodstuffs would be likely to choose a menu which enabled

them to live in accordance with the given standard at such low cost. Much food, too, is spoiled in the cooking, and I make no allowance for this, nor do I allow for unnecessary waste. I feel strongly, therefore, that my bill of fare cannot be called too liberal, though it might easily be challenged as not liberal enough.

Now, what is the cost of providing this dietary? It would obviously be useless to base any estimate upon the abnormal prices of war time. We must consider, therefore, the cost of living just prior to the outbreak of war; and all prices given in this chapter, whether referring to food or to other necessaries, are, unless otherwise stated, those which prevailed in York in July 1914.

The dietary cost 4s. 4d. per man per week; but since a man's wage should provide not only for his own needs but for those of his wife and children, we must make allowance for the latter. Assuming that the food requirements of a woman

are eight-tenths those of a man, and that the average food requirements of children under fourteen are one-half those of a man, the cost of a woman's food would be 3s. 6d., and that of each child 2s. 2d. It must be remembered, however, that food suitable for young children, which should contain a considerable quantity of milk, costs more per unit of nutriment than the food for adults. I therefore allow another 3d. per week for each child's food, which brings the figure for children up to 2s. 5d. per week on the average. Thus we get a total of 15s. 1d. as the minimum sum which must be spent per week upon food for a man, wife, and three young children.

*Rent.*—Next to food, house rent is the most important item in a working man's budget. The minimum requirements of a working-class family may be briefly stated as a properly constructed house, with three bedrooms, a fair-sized living room, and a scullery-kitchen, preferably with a bath in it.

The cost of such accommodation, of course, varies enormously from town to town and between town and country. But if we confine ourselves to towns, and exclude those, like London, where rents are abnormally high, the sum of 6s. a week to cover rent and rates will be fairly representative. I therefore adopt this figure in my final estimate, with the proviso that it must be modified according to local needs. Once again, let me say that I am speaking of prices as they were in July 1914.

*Clothing, Fuel, and Household Sundries.*—The sum allowed for clothing provides, as has been stated, just what is necessary to keep the body warm and dry, and to maintain a modest respectability; there is nothing allowed for mere show. At 1914 prices, the cost works out at 1s. 9d. per week for a man, 1s. for his wife, and 9d. for each child—making a total of 5s. for a family of five.

*Fuel.*—The estimated cost of fuel is based on inquiries made as to the actual sums expended

by a number of working-class families, which showed that in York the average consumption, taking the different seasons together, was 1½ ten-stone bags per week, which at 1s. 8d. per bag amounts to 2s. 6d.

*Household Sundries.*—Household sundries comprise such items as cleaning materials, lighting, and the ordinary repair or replacement of household utensils. Nothing is allowed for the purchase of new furniture. The total sum needed for a family of five may be put at 1s. 8d. per week.

*Personal Sundries.*—I discussed at some length in Chapter V. the allowance which should be made for such personal expenses as insurance and sick clubs, recreation, travelling, and numbers of other claims, and came to the conclusion that 5s. a week for the whole family was the very lowest figure at which it could be placed.

We can now add up the various items as follows :—

| | s. | d. |
|---|---|---|
| Food | 15 | 1 |
| Rent | 6 | 0 |
| Clothing | 5 | 0 |
| Fuel | 2 | 6 |
| Sundries— | | |
| Household | 1 | 8 |
| Personal | 5 | 0 |
| Total | 35 | 3* |

## Women.

In dealing with the minimum wage for women I did not enter into the question of equal pay for equal work, or discuss the relative value of the services rendered by men and by women. Those matters, however important, were irrelevant to my present purpose. Such investigations as I have made tend to show that the great majority of women, possibly five out of every six, are not to any material extent responsible for the maintenance of dependants. For this and for other reasons, which need not here be stated,

* With prices as at July 1914.

I based the minimum wage for women simply upon their actual personal needs.

What are those needs? Women engaged in industry, as a rule, either live at home or lodge with other families. Although their expenses vary to some extent from town to town, I came to the conclusion that we should not be far wrong if we allowed 12s. a week for adequate board, a respectable lodging, and laundry, again referring to prices in 1914. As for clothing, I estimated its cost for a single woman at a higher figure than was allowed for the wife of a worker. A girl's prospect of making a satisfactory match depends to a considerable extent upon her ability to dress attractively. Even more than the married woman, she needs not only respectable working clothes, but clothes for evenings and Sundays. After careful inquiry I allowed 4s. per week for clothing, and a further 4s. for personal sundries, covering National Health Insurance, and a second sick club, a Trade Union subscription, travelling to and from work, as well as other travelling,

recreation, and the multitude of incidental expenses which are practically inevitable in a civilized community.

Altogether these items amount to £1 per week, namely :—

| | *s.* | *d.* |
|---|---|---|
| Board and lodging and laundry . . . | 12 | 0 |
| Clothing . . . . . | 4 | 0 |
| Sundries (personal) . . . . . | 4 | 0 |
| | 20 | 0 |

We must, however, accept the above estimates with very important qualifications. First, they are based on prices as they were in July 1914. In the opening months of 1918, taking into account not merely the cost of food, but the whole cost of living, prices had risen above the pre-war level by 60 or 70 per cent.* Although, when

* In the *Labour Gazette* for March 1918 the increased expenditure on the necessaries of life since July 1914 is estimated at between 50 and 55 per cent. (which must not be confused with the 107 per cent. increase in the cost of a selected list of food stuffs). My figure, however, is based, so far as food is concerned, on a dietary so economical that it does not admit of the substitution of cheap foods for dear foods, nor of any reduction in its nutritive value.

It should not be forgotten that the extent to which the cost of

prices are fluctuating very rapidly, it would endanger industry to regulate minimum wages in precise accordance with the cost of living, that is what must regulate them in the long run. No one can foretell the extent to which prices will drop at the close of the war; but it would be optimistic to assume that for some years to come they will be less than 25 per cent. in excess of those which ruled in July 1914. Thus, quite apart from the abnormal conditions of wartime, it will probably be necessary for a considerable period to fix minimum wages at least 25 per cent. higher than they might have been fixed before the war. If my own estimates were adopted, this would mean, after the war, a wage of 44s. for men and of 25s. for women.

Of course, 25 per cent. is only a hypothetical figure. Prices might drop so slowly that mini-

living has risen during the war varies inversely with the family income. The poorest families have suffered most, since they spend the largest proportion of their income on food, which has risen more than any other commodity. In the case of many of the poorest families the rise in the cost of living is more than 60 or 70 per cent.

mum wages would have to be fixed at a money level 30 or 40 per cent. above the corresponding pre-war level. On the other hand, though the contingency is improbable, they might drop more rapidly than I have suggested. But one thing is certain—that no minimum wage adjusted to pre-war prices could possibly be adequate for many years to come.*

The second important qualification to be borne in mind is that I have based my estimate of the minimum wage for men on the requirements of a household with only three dependent children. It was, however, shown in Chapter I. that to adopt that estimate would leave half the children in the families affected inadequately provided for during five years or more of their lives. Even a minimum wage based on the requirements of a household with four dependent chil-

* It will be noted that I have not made any suggestion as to the age at which the above wage should become payable. It is possible that in the case of men it might be somewhat higher than twenty-one years, as the wage is based on the needs of a man with a wife and three children.

dren would for five years or more fail to meet the needs of 38 per cent. of the children affected. These facts are far too serious to be ignored or set aside.

### Conclusions.

Let me repeat once more that the standards adopted throughout this book err on the side of stringency rather than of extravagance. I am convinced that the very closest investigation would fail to lower appreciably any of my estimated costs.* We are confronted, then, by the incontrovertible fact that, even allowing for a heavy drop in the present cost of living, the incomes of unskilled labourers must be enormously increased if their elementary human needs are to be met. How are we as a nation to solve the problem which this fact presents ?

A few people will contend that it is too vast to be solved.

* I deal in Appendix F, p. 155, with the argument that my conclusions are vitiated by the fact that, speaking generally, death and disease rates in rural districts are markedly lower than in towns, though rural wages are much lower than urban wages.

"After all," they will say, "the workers have managed to rub along in the past, and incidentally they have helped to place Britain in the forefront of the nations, whether we judge her by the standard of industrial enterprise or that of *per capita* wealth. We must leave the wages of unskilled labour to the operation of economic forces."

This counsel might have been endorsed more readily some years ago, when there seemed to be no urgent reason for making a radical increase in wages at any particular time. But now all is changed. When peace is declared at last, we cannot set back the clock and reinstate ourselves in the world we knew before the war. We shall have to make a fresh start, in a fresh world. In that world, are millions of our fellow-citizens to go on living in slums? Is the death rate among the children of the unskilled workers to remain far higher than among the children of the well-to-do? Are we, in short, to restore or to perpetuate the

old abuses, the old evils, the old resentment, the old wrong?

No; industry to-day is in the melting-pot. We must remould it in accordance with a juster standard.

This undoubtedly will be the answer of the nation as a whole. She will never allow the men who have fought for Britain to return to the old conditions. The war has shaken us at last out of our lethargy. We see things, not through the bewildering haze of custom and convention, but in the clear light of truth; and, seeing them, we know that they are too bad to tolerate.

Let us, then, face the problem raised in this book with the certainty that it can be solved, and with the fixed determination to solve it. I do not propose to discuss any solution in detail, since to do so would lead me far beyond my present purpose; but as to general methods there are still a few words to say.

First, we must ask the question whether industry can afford a vast increase in its wage bill.

I may remind the reader that, speaking generally, increased wages may come from one or more of the following sources :—

(1.) A decrease in the cost of raw materials.

(2.) An increase in selling prices.

(3.) Reduction of profits, but not below the level required to attract the necessary capital.

(4.) An increase in the productivity of industry, whether due to better organization and machinery, greater efficiency on the part of the workers or management, or any other factor.

The last of these is undoubtedly the most important. We cannot limit its possibilities. The war has shown that, when the need arose, huge improvements could be made with incredible rapidity in process after process ; and industry could be so organized that, without adding to the strain on the individual worker, the output was enormously increased.* If development in

* I am, of course, aware that many workers have during war-time worked far beyond their strength. In what I say above I have not in mind increased productivity which is accompanied by overstrain on the workers.

this direction continues steadily after the war, and the additional wealth created, or the economies effected, are devoted as far as possible to the payment of a living wage, we shall have taken a long step towards the solution of our problem.

Trade Boards should be set up for all industries, and instructed by statute to fix at the earliest possible date, for men of ordinary ability, minimum wages which would enable them to marry, live in a decent house, and bring up a family of normal size—which I here assume to be a family with three dependent children—in a state of physical efficiency, while allowing a reasonable margin for contingencies and recreation. This, as we have seen, will probably mean not less than 44s. a week, when prices drop to 25 per cent. above the pre-war level.

I know that it will be impossible to insist on such wages at a Trade Board's first meeting. Industry must have a breathing space in which to adapt itself to fresh conditions. This, indeed,

constitutes the argument for fixing wages by a number of Trade Boards rather than by the enactment by Parliament of a flat rate. But a definite limit must be set to the breathing space. Doubtless sweeping changes must take place in many industries before they can conform to the new policy; but if it is inflexible, those changes will be made. Industry, after all, exists for citizenship, not citizenship for industry.*

But I have so far only dealt with wages sufficient to support families with three dependent

* It may be urged that I am dealing too slightly with the all-important question of whether industry can bear wages on the level indicated above. To deal with it adequately, however, would occupy many chapters and lead me too far afield. Many volumes have been written on the economy of high wages, perhaps the most notable being Arthur Shadwell's "Industrial Efficiency" (Longmans, Green, and Co., 1909). Messrs. Gray and Turner, in their "Eclipse or Empire" (Nisbet and Co., Ltd., 1916), also give a mass of evidence to show how great are the possibilities before British industry if the fullest use is made of the teachings of science, and if old prejudices are swept away. Further evidence is afforded in a constantly growing list of books and magazine articles dealing with up-to-date business methods. In Appendix G, p. 157, I give an extract from an article I wrote for the *Contemporary Review* (October 1917), in which I discuss at somewhat greater length the ability of industry to pay wages on the scale I suggest above.

children. We saw, however, that if the minimum wage only provided for this number, half the children in the families affected would for more than five years be inadequately provided for, and we recognized that this was far too serious a matter to overlook. How can it be dealt with? It is obviously impracticable to differentiate wages in accordance with the number in the family. This would merely lead to the selection by employers in "slack" times of single men, or men with small families, and men with large families would always be liable to unemployment.

In so far as the problem of larger families can eventually be met by raising the minimum wage, well and good. This, no doubt, is the ideal at which wage boards should aim. But even to fix the minimum generally at a level which will provide for a family with three dependent children means a heavy demand on the resources of industry; and at present there is little prospect of establishing a minimum sufficient for larger

families. Unless, therefore, we are to continue to allow a large proportion of the nation's children to pass through many critical years ill-housed, ill-clad, and underfed, we must seek some other means of solving the problem which confronts us. The only remaining solution—and I admit that it is fraught with many difficulties—is to fix minimum wages sufficient to secure physical efficiency for, say, three dependent children, and for the State to make a grant to the mother in such cases, and for such a time as there are more than three dependent children. This suggestion may appear revolutionary, but it is nothing new. Such a principle is already admitted in the case of the Income Tax, where a substantial abatement is made for every child. If Parliament has recognized the need for such a State grant to families with an income of not less than £130 a year, surely a much stronger case can be made out for a similar grant where the income is much smaller. Again, the State graduates its separation allowance for soldiers'

wives according to the number of dependent children.

What would be the cost of such a scheme as is suggested above? At the date of the 1911 census there were in York 1,641 families with more than three dependent children.* The total number of children in excess of three per family was 2,837. If in this matter York be regarded as typical of the country as a whole—and there is no reason why it should not be so regarded—then the number of such children in Great Britain would be 1,418,500. Assuming that a contribution were made of 3s. per week for each of these children, then the total cost to the country would be roughly £11,000,000 per annum. But if, as is probable, contributions were only made, or at any rate only *claimed*, in the case of families whose incomes fell below a certain limit, the total

* 878 families had four dependent children.
464 families had five dependent children.
197 families had six dependent children.
75 families had seven dependent children.
22 families had eight dependent children.
5 families had nine dependent children.

cost of the scheme would be proportionately lessened. Very roughly, we may say that the scheme would probably cost in the neighbourhood of £8,000,000 per annum for Great Britain.

It is, after all, one of the nation's first duties to see that its citizens are adequately provided for during their youth; and when it is impossible to meet the case through ordinary channels, the State itself may reasonably be expected to intervene, if only because no civilization can be sound or stable which has at its base a mass of stunted human life.

To sum up the whole matter, I have proposed that, within a period to be prescribed by Trade Boards, minimum wages, based on the cost of living, should be fixed for all industries. These would probably not be less than 44s. a week for men and 25s. for women. In addition, I have proposed that an annual grant of eight or nine millions should be made by the Exchequer to secure adequate provision for families with more than three dependent children.

I am profoundly conscious of the grave practical difficulties which the policy I advocate would involve. Its adoption, more especially with regard to the fixing of minimum wages, would impose a heavy burden upon all those responsible for the conduct of industrial life, and agriculture would confront a yet more intricate problem. Yet I venture to submit, in all seriousness, that the nation must choose either difficulty or disaster. I submit that the day is past in which we could afford to compromise between the desires of the few and the needs of the many, or to perpetuate conditions in which large masses of the people are unable to secure the bare necessaries of mental and physical efficiency. I submit that when the war is over, with its record of infinite sacrifice, it will leave us not only with huge monetary obligations, but with a debt to the dead which must be paid to the living, in terms of life and health and opportunity. We cannot refuse to discharge that supreme debt.

# APPENDIX A.

THE following table shows the numbers of survivors at certain ages out of the births to 100,000 of the population in 1881–1890, 1891–1900, 1901–1910, and 1910–1912 :—

| Age. | Born and surviving at each age. | | | |
|---|---|---|---|---|
| | 1881–90. | 1891–1900. | 1901–10. | 1910–12. |
| 0 | 3,246 | 2,988 | 2,721 | 2,446 |
| 1 | 2,504 | 2,520 | 2,364 | 2,179 |
| 2 | 2,367 | 2,391 | 2,272 | 2,106 |
| 3 | 2,312 | 2,342 | 2,237 | 2,079 |
| 4 | 2,277 | 2,311 | 2,214 | 2,062 |
| 5 | 2,251 | 2,288 | 2,197 | 2,049 |
| 10 | 2,200 | 2,239 | 2,160 | 2,015 |
| 20 | 2,137 | 2,171 | 2,106 | 1,968 |
| 30 | 2,009 | 2,059 | 2,020 | 1,897 |
| 40 | 1,826 | 1,895 | 1,890 | 1,793 |
| 50 | 1,590 | 1,659 | 1,694 | 1,628 |
| 60 | 1,261 | 1,316 | 1,382 | 1,353 |
| 70 | 796 | 829 | 917 | 917 |
| 80 | 289 | 298 | 354 | 369 |

# APPENDIX B.

In the following table the families investigated are classified according to the number of dependent children and the number of years during which dependence lasts. The figures in italics represent the families where the total number of dependent children is 1, 2, 3, 4, etc. The others represent the families where the number of dependent children is 1 or more, 2 or more, 3 or more, 4 or more, etc. Thus, to take an example, there were 84 families which had 3 or more dependent children for 12 years, but of these 12 had exactly 3 dependent children for 12 years; the remaining 72 had during a period of 12 years never less than 3 dependent children, but during a part of that period the number of dependent children exceeded 3.

| Period of Dependence. | Number of Children. | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 only. | 1 or more. | 2 only. | 2 or more. | 3 only. | 3 or more. | 4 only. | 4 or more. | 5 only. | 5 or more. | 6 only. | 6 or more. | 7 only. | 7 or more. | 8 only. | 8 or more. | 9 only. | 9 only. |
| 1 year | | | *3* | 3 | *15* | 15 | *30* | 30 | *40* | 40 | *34* | 34 | *23* | 23 | *6* | 6 | *2* | 2 |
| 2 years | | | *7* | 7 | *9* | 9 | *27* | 27 | *28* | 28 | *23* | 24 | *11* | 11 | *8* | 8 | *1* | 1 |
| 3 „ | | | *8* | 8 | *11* | 11 | *24* | 24 | *32* | 33 | *24* | 27 | *10* | 11 | *4* | 4 | | |
| 4 „ | | | *11* | 11 | *35* | 35 | *38* | 38 | *41* | 42 | *23* | 23 | *3* | 3 | *2* | 3 | | |
| 5 „ | | | *21* | 21 | *45* | 45 | *35* | 42 | *33* | 35 | *10* | 17 | *2* | 5 | | | | |
| 6 „ | | | *15* | 15 | *36* | 37 | *34* | 40 | *27* | 37 | *10* | 20 | *6* | 9 | *1* | 3 | *1* | 1 |
| 7 „ | | | *25* | 25 | *44* | 47 | *24* | 43 | *12* | 44 | *5* | 12 | *1* | 9 | | | | |
| 8 „ | | | *23* | 23 | *37* | 45 | *32* | 63 | *5* | 34 | *4* | 14 | | 6 | | | | |
| 9 „ | | | *30* | 30 | *40* | 59 | *16* | 58 | *8* | 31 | | 9 | | | | | | |
| 10 „ | | | *51* | 51 | *52* | 79 | *8* | 44 | | 21 | | 11 | | 2 | | | | |
| 11 „ | | | *64* | 65 | *23* | 69 | *3* | 45 | | 20 | | 4 | | | | 1 | | |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 „ | | | *43* | 43 | | 29 | | 21 | | 7 | | 3 | | 1 | | | | |
| 14 „ | *330* | 333 | *11* | 322 | | 181 | | 81 | | 32 | | 3 | | 1 | | | | |
| 15 „ | | 34 | | 23 | | 17 | | 10 | | 2 | | 1 | | | | | | |
| 16 „ | | 93 | | 81 | | 53 | | 24 | | 9 | | | | | | | | |
| 17 „ | | 75 | | 68 | | 44 | | 21 | | 3 | | 1 | | | | | | |
| 18 „ | | 101 | | 54 | | 33 | | 16 | | 2 | | | | | | | | |
| 19 „ | | 76 | | 82 | | 40 | | 11 | | | | | | | | | | |
| 20 „ | | 77 | | 68 | | 38 | | 12 | | 1 | | | | | | | | |
| 21 „ | | 82 | | 67 | | 27 | | 7 | | 1 | | | | | | | | |
| 22 „ | | 87 | | 45 | | 22 | | 3 | | | | | | | | | | |
| 23 „ | | 113 | | 48 | | 21 | | | | | | | | | | | | |
| 24 „ | | 111 | *1* | 45 | *1* | 15 | | 2 | | | | | | | | | | |
| 25 „ | | 62 | | 56 | | 11 | | | | | | | | | | | | |
| 26 „ | | 62 | | 30 | | 3 | | | | | | | | | | | | |
| 27 „ | | 111 | | 30 | | 3 | | | | | | | | | | | | |
| 28 „ | *6* | 80 | | 37 | | 1 | | | | | | | | | | | | |
| 29 „ | | 66 | | 15 | | | | | | | | | | | | | | |
| 30 „ | | 49 | | 5 | | | | | | | | | | | | | | |
| 31 „ | | 60 | | 4 | | | | | | | | | | | | | | |
| 32 „ | | 47 | | 1 | | | | | | | | | | | | | | |
| 33 „ | | 42 | | 2 | | | | | | | | | | | | | | |
| 34 „ | | 26 | | 1 | | | | | | | | | | | | | | |
| 35 „ | | 8 | | | | | | | | | | | | | | | | |
| 36 „ | | 13 | | | | | | | | | | | | | | | | |
| 37 „ | | 3 | | | | | | | | | | | | | | | | |
| | *336* | 1811 | *402* | 1475 | *360* | 1073 | *272* | 713 | *227* | 441 | *133* | 214 | *56* | 81 | *21* | 25 | *4* | 4 |

# APPENDIX C.

Professor Chittenden of Yale, the most widely known of the adherents of the low protein school of physiologists, undertook various investigations with the object of ascertaining the *minimum* amount of protein which a diet should furnish in order to maintain health and strength and body weight. The experiments were conducted upon men of different social grades, including university professors and medical men, men of the Army Medical Corps, and university athletes. The whole of the food they consumed was weighed and measured, and their daily excretions analyzed.

In order to maintain nitrogen equilibrium, Chittenden personally required only 36 grams of protein, the average for eight athletes amounted to 55 grams, and the average for twenty soldiers, 50 grams. These men were all undertaking their ordinary training and work.

They lost weight at the outset, but after a time their weight remained constant to the close of the experiment. It is stated that they soon became accustomed to the low dietary, and were able to work with greater ease, strength, and endurance.

In estimating the value of these experiments, it must be

remembered that the men were living under conditions of strict regularity, which would be impossible for people leading their normal lives; that the experiments were continued only for a prescribed period; and that the men themselves decided to undertake the experiment of their own free will.

Although the experiments are of great interest, they have not convinced the great majority of physiologists that advantage would accrue if all people lived on the low protein diet used in these tests. There is no proof that the same results would be shown if the experiments were continued for a few years; neither is it known how far the persons experimented on would be able to resist disease. The psychological factor has a great bearing on the results of experiments of this kind; and the conditions of health under which the men experimented on were living are hardly attainable in the case of the great bulk of the people.

Again, it has been conclusively shown, from actual experiments made on soldiers undertaking route marches, that unless an extremely liberal diet is furnished, containing about three times as much protein as in the cases referred to above, there is a decided falling off in fitness among the men. Another important factor to be borne in mind, in considering the result of the experiments conducted by Professor Chittenden, is that in almost all cases the men have since returned to their normal dietary.

# APPENDIX D.

| No. | No. in family. | | | Man's average wage. | | Average family income. | | Average weekly expenditure on food. | | Nutritive value of dietary. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Adults. | Children. | Total. | | | | | | | Protein (grams) per man per day. | Fuel energy (calories) per man per day. |
| | | | | *s.* | *d.* | *s.* | *d.* | *s.* | *d.* | | |
| 1 | 4 | 0 | 4 | 40 | 0 | 54 | 0 | 24 | 7 | 92·3 | 3179 |
| * 2 | 2 | 1 | 3 | 36 | 6 | 36 | 6 | 18 | 2 | 96·3 | 3708 |
| 3 | 2 | 3 | 5 | 38 | 0 | 38 | 0 | 19 | 10 | 98·1 | 3464 |
| †* 4 | 2 | 5 | 7 | 32 | 0 | 32 | 0 | 22 | 4 | 102·5 | 3452 |
| 5 | 2 | 3 | 5 | 38 | 0 | 40 | 6 | 22 | 10 | 104·0 | 3704 |
| 6 | 4 | 3 | 7 | 30 | 0 | 66 | 0 | 32 | 6 | 105·0 | 3506 |
| 7 | 2 | 4 | 6 | 39 | 6 | 39 | 6 | 22 | 3 | 105·0 | 3277 |
| 8 | 4 | 3 | 7 | 28 | 0 | 48 | 6 | 32 | 3 | 105·0 | 3218 |
| ‡ 9 | 4 | 1 | 5 | | ? | | ? | 29 | 9 | 107·5 | 3947 |
| 10 | 3 | 0 | 3 | 28 | 0 | 34 | 6 | 21 | 3 | 109·3 | 3821 |
| 11 | 3 | 2 | 5 | 39 | 6 | 49 | 6 | 26 | 5 | 110·0 | 3527 |
| 12 | 3 | 2 | 5 | 37 | 0 | 46 | 10 | 23 | 9 | 110·0 | 3422 |
| 13 | 6 | 1 | 7 | 48 | 0 | 48 | 0 | 28 | 8½ | 111·0 | 3405 |
| 14 | 2 | 4 | 6 | 39 | 1½ | 39 | 1½ | 24 | 0 | 116·3 | 3868 |
| *15 | 2 | 1 | 3 | 41 | 0 | 41 | 0 | 17 | 8½ | 116·3 | 3498 |
| *16 | 2 | 3 | 5 | 34 | 0 | 34 | 0 | 24 | 5 | 117·0 | 3886 |
| †17 | 3 | 0 | 3 | | ? | | ? | 22 | 5 | 118·0 | 3835 |
| 18 | 2 | 1 | 3 | | ? | | ? | 20 | 1 | 119·6 | 3859 |
| ‡19 | 2 | 4 | 6 | 35 | 5 | 35 | 5 | 22 | 3 | 120·0 | 3723 |
| *20 | 2 | 5 | 7 | 40 | 0 | 40 | 0 | 28 | 1 | 120·6 | 4001 |
| 21 | 2 | 3 | 5 | 42 | 6 | 42 | 6 | 25 | 5 | 122·6 | 3944 |
| ‡22 | 2 | 2 | 4 | | ? | | ? | 22 | 8 | 125·0 | 4185 |
| ‡*23 | 3 | 1 | 4 | | ? | | ? | 29 | 5½ | 126·0 | 3844 |
| *24 | 2 | 0 | 2 | 40 | 6 | 40 | 6 | 17 | 3 | 126·6 | 4261 |
| 25 | 2 | 0 | 2 | 42 | 0 | 42 | 0 | 20 | 3 | 126·7 | 3967 |
| ‡*26 | 3 | 0 | 3 | 32 | 0 | 44 | 4 | 22 | 8 | 130·0 | 4138 |
| 27 | 2 | 1 | 3 | 32 | 0 | 33 | 9 | 21 | 5 | 130·3 | 3453 |
| *28 | 4 | 2 | 6 | 40 | 0 | 56 | 0 | 35 | 0 | 130·3 | 4446 |
| 29 | 2 | 0 | 2 | 47 | 6 | 47 | 6 | 19 | 8 | 130·6 | 4848 |
| 30 | 5 | 0 | 5 | 32 | 0 | 48 | 6 | 30 | 5 | 137·0 | 4329 |
| | | | | Average . . . . | | | | | | 115·6 | 3790 |

† Budget kept for two weeks only.
‡ Budget kept for one week only.
All other budgets were kept for three weeks

## Note to Appendix D.

Two facts should be borne in mind in considering the average weekly expenditure on food:—

1. The families marked with an asterisk have allotment gardens, and a few of them took a substantial amount of food from these during the weeks they were under observation. The value of this has not been included in the average weekly expenditure upon food, but its nutritive value has been allowed for.

2. In certain cases, expenditure upon food absorbs an abnormally high proportion of the family income. That is because the period under consideration included a holiday week, in which short time was worked. In such weeks families often postpone their expenditure on clothing and sundries rather than economize to any extent on food.

# APPENDIX E.

## Estimates of the Necessary Annual Cost of a Man's Clothing.

| | No. 1. | No. 2. | No. 3. |
|---|---|---|---|
| | *s.* *d.* | *s.* *d.* | *s.* *d.* |
| Suit | 30 0 | 35 0 | 30 0 |
| Overcoat * | None. | 10 0 | 8 0 |
| Boots | 21 0 | 22 6 | 15 0 |
| Repairs | 4 6 | 5 0 | 5 6 |
| Pants | None. | 5 0 | 3 0 |
| Vests | 5 0 | 4 0 | 3 0 |
| Shirts | 5 10 | 6 6 | 7 0 |
| Socks | 3 0 | 3 1½ | 2 3 |
| Nightshirt | 1 9 | 2 11 | 3 6 |
| Cap | 1 6 | 1 0 | 1 6 |
| Ties | 1 0 | .... | 1 6 |
| Collars | 3 0 | 4 0 | 3 0 |
| Handkerchiefs | 1 0 | 1 6 | 1 0 |
| | 77 7 | 100 6½ | 81 2 |

| | No. 4. | No. 5. | No. 6. |
|---|---|---|---|
| | *s.* *d.* | *s.* *d.* | *s.* *d.* |
| Suit | 35 6 | 45 0 | 35 0 |
| Overcoat * | 10 6 | 10 0 | None. |
| Boots | 18 11 | 21 11 | 17 10 |
| Repairs | 3 6 | 3 9 | 4 6 |
| Pants | 4 10 | 3 0 | None. |
| Vests | 4 10 | 2 6 | None. |
| Shirts | 6 0 | 4 0 | 5 11 |
| Socks | 3 0 | 4 6 | 3 0 |
| Nightshirt | 2 11 | 3 11 | 3 6 |
| Cap | 1 0 | 2 9 | 1 6 |
| Ties | 2 0 | 1 1 | 1 1 |
| Collars | 2 0 | 2 0 | 3 0 |
| Handkerchiefs | 1 0 | 1 0 | 1 0 |
| | 96 0 | 105 5 | 76 4 |

* Overcoat lasts a number of years, and the amount entered represents yearly portion of cost.

| | No. 7. | No. 8. | No. 9. |
|---|---|---|---|
| | *s.* *d.* | *s.* *d.* | *s.* *d.* |
| Suit | 50 0 | 26 3 | 29 0 |
| Overcoat* | 7 6 | 6 0 | 8 4 |
| Boots and repairs | 21 0 | 31 6 | 21 0 |
| Pants | 5 0 | 3 10 | 5 10 |
| Vests | 2 0 | 5 0 | 5 10 |
| Shirts | 5 6 | 8 9 | 5 0 |
| Socks | 3 3 | 3 0 | 3 1½ |
| Nightshirt | 3 9 | None. | None. |
| Cap | 1 0 | 1 6 | 3 6 |
| Ties | 1 6 | 0 6 | 1 0 |
| Collars | 2 6 | None. | .... |
| Handkerchiefs | 1 0 | .... | .... |
| | 104 0 | 86 4 | 82 7½ |

| | No. 10. | No. 11. | No. 12. |
|---|---|---|---|
| | *s.* *d.* | *s.* *d.* | *s.* *d.* |
| Suit | 29 9 | 40 0 | 40 0 (& overalls) |
| Overcoat* | None. | 12 6 | 11 9 |
| Boots and repairs | 22 8 | 16 0 | 21 0<br>5 0 |
| Pants | 5 10 | 3 11 | 5 0 |
| Vests | 5 10 | 3 11 | 5 0 |
| Shirts | 6 0 | 8 9 | 7 6 |
| Socks | 3 9 | 4 6 | 3 9 |
| Nightshirt | .... | .... | .... |
| Cap | 1 6 | 1 0 | 3 9 |
| Ties | 0 6½ | 1 1 | 1 0 |
| Collars | 1 0 | 1 0 | 1 4 |
| Handkerchiefs | .... | 0 9 | 1 3 |
| | 76 10½ | 93 7 | 106 4 |

* Overcoat lasts a number of years, and the amount entered represents yearly portion of cost.

## Estimates of the Necessary Annual Cost of a Woman's Clothing.

| | No. 1. | No. 2. | No. 3. |
|---|---|---|---|
| | *s.* *d.* | *s.* *d.* | *s.* *d.* |
| Coat and skirt * | 10 0 | 10 0 | 8 3 |
| Blouses | 10 0 | 4 0 | 4 0 |
| Underclothing | 18 2½ | 12 1 | 13 9 |
| Stockings | 3 1½ | 1 7½ | 2 0 |
| Nightdresses | 5 4 | 3 4½ | 6 0 |
| Boots and repairs | 4 11 | 7 11 | 7 11 |
| Hat | .... | .... | 4 6 |
| Long coat | .... | 5 6 | .... |
| | 51 7 | 44 6 | 46 5 |

| | No. 4. | No. 5. | No. 6. |
|---|---|---|---|
| | *s.* *d.* | *s.* *d.* | *s.* *d.* |
| Coat and skirt * | 14 11 | 14 0 | 7 0 |
| Blouses | 3 10 | 5 10 | 7 6 |
| Underclothing | 11 6 | 15 9 | 12 7 |
| Stockings | 3 0 | 3 0 | 3 0 |
| Nightdresses | .... | 3 10 | 5 10 |
| Boots and repairs | 10 5 | 4 11 | .... |
| Hat | 7 0 | 7 11 | 5 11 |
| | 50 8 | 55 3 | 41 10 |

| | No. 7. | No. 8. |
|---|---|---|
| | *s.* *d.* | *s.* *d.* |
| Coat and skirt * | 14 6 | 21 0 |
| Blouses | 6 0 | 5 11 |
| Underclothing | 12 11 | 14 9½ |
| Stockings | 3 1½ | 3 1½ |
| Nightdresses | 6 0 | 7 0 |
| Boots and repairs | 14 6 | 12 4 |
| Hat | 6 6 | 6 11 |
| | 63 6½ | 71 1 |

* Coat and skirt last a number of years, and the amount entered represents yearly portion of cost.

# APPENDIX F.

Some critics may argue that my conclusions are vitiated by the fact that, speaking generally, death and disease rates in rural districts are markedly lower than in towns, although rural wages are much lower than urban wages.

This argument, however, will not bear close examination. It merely reminds us that certain urban conditions which are prejudicial to health may, and often do, outweigh the effect of higher wages. We all know what these conditions are; to what an extent, for instance, overcrowding, not only per house but per acre, favours the spread of all infectious diseases. A slum cottage in the town is much more dangerous to health than a slum cottage in the country, surrounded as the latter is by fresh air.

Again, even if, taking the country as a whole, rural workers are more healthy than town workers, they are very far from being as healthy as they should be. Of this fact we have abundant evidence.

Sir Arthur Newsholme, in his report on Child Mortality for 1915–16, shows that the death rate of children aged 0–5 in rural districts (for the years 1911–14) averaged 125 per 1,000 living at those ages. He compares this figure with the death rate of children of the same age in a number of Metropolitan boroughs and great and small towns, and shows that the rural rate is higher than Hampstead (112), Lewisham (116), Stoke Newington (121); that there are no

less than twelve great towns with a lower death rate than the rural one; and he gives a list of twenty-two smaller towns which also have lower death rates, including Woking (97), Tunbridge Wells (94), Finchley (93), Southgate (88), Weymouth (99), Reigate (96), Rugby (98). Now, apart from the poverty in the rural districts, country children should everywhere be healthier than town children, and the many instances in which this is not the case emphasize the serious consequences of low wages in rural districts.

Again, Sir George Newman, in his report on the Medical Inspection of School Children for the year 1914, shows that out of 45,015 leavers inspected in eleven different rural areas, no less than 8·9 per cent. were suffering from defective nutrition. It is impossible to argue that the condition of children in rural areas is satisfactory when one out of every eleven is proved by medical examination to be underfed.

I have attempted elsewhere * to show how difficult it is for agricultural workers to make ends meet while they have children dependent upon them; how largely they have to rely upon charity, and what burdens of debt they incur; how wife and young children have to eke out their father's wage by working; and how the father is obliged to work long hours in his garden after doing a full day's work for his employer. A wage cannot be regarded as adequate which must be supplemented in so many ways before the bare necessaries of life can be procured.

* "How the Labourer Lives," by May Kendall and B. S. Rowntree. Nelson, 3s. 6d.

# APPENDIX G.

[These notes are extracted from an article contributed by the present writer to the *Contemporary Review* (October 1917). They follow upon the statement that the minimum wage for men and women should not be less than 35s. and 20s. a week respectively, on the basis of prices ruling in 1914.]

CAN industry bear so large an increase in its wage bill? If it were to be suddenly and universally enforced, undoubtedly not; but experience in the industries affected by the Trade Boards shows that if some margin be allowed in the matter of time, industries can afford to pay wages far higher than the employers affected quite honestly believe it possible to pay. The best way to secure the necessary advances in wages would be to set up Trade Boards for all industries, and instruct them to bring minimum wages as soon as possible to a level which would fulfil the conditions indicated above. Doubtless, this level would be reached more rapidly in some industries than in others; but in every case it should be reached with the least possible delay.

But it is certain that if workers are to be paid a much higher rate of wages, their productive power must be materially increased. I do not, indeed, consider that the earnings of capital are sacrosanct, and should not be en-

croached upon by any consideration of better wages for the workers. But even large reductions in profits, where competition has not reduced them to the level below which they must not fall if fresh capital is to be forthcoming, would only partially meet the case. It is clear that so substantial an addition to wages as I suggest can only be made on the strength of a larger output. Now, I think that labour can be rendered more productive in four ways.

### How can the Productivity of Labour be increased?

(*a*) *Improved Methods.*—At present many British factories are run on very inefficient lines. Much of the machinery is antiquated, the works are ill-arranged, and the staff and workers are ill-trained. In such cases, even when wages are low, the profits earned are inconsiderable, and any request for higher wages is met by the argument that the industry cannot afford them. What is here needed is a critical examination of each process, to see whether the productivity of every unit of labour cannot be increased. A skilled engineer, preferably one who is acquainted with the particular industry, should be set aside for the work, or called in to undertake it. He should have no routine executive duties, but simply concern himself with checking leakage and improving efficiency. If he is the right man, there are few factories in which he will not very soon be able to effect important economies. He will (perhaps with the aid of an accountant) closely analyze the working costs, and, if possible, compare them with costs elsewhere. The splitting up of

costs and their comparison with those in other factories is a wonderful means of enabling an employer to place his finger on the weak spots. It is not enough to compare the *total* working costs with those of other manufacturers; they must be split up as minutely as possible. An accountant of great experience told me that he recently came across a case where the total working costs of a group of employers engaged in making a certain article only varied by about 5 per cent., but the costs of some of the particular processes varied by as much as 60 per cent. It is these variations that we must trace if we are to find out where waste is occurring.

Only when every process in the factory has been submitted to a minute examination is an employer really in a position to say whether his industry can or cannot afford to pay higher wages.

(*b*) *Improved Systems of Payment.*—Secondly, the output of the workers can be increased by offering them stronger inducements to do their best. A close study should be made of the different processes in a factory, and the employer should ask himself whether each worker is paid in the way best calculated to stimulate him, and to avoid misunderstanding and friction. For instance, is work now being paid for on day wage which could better be put on "piece"? If piecework is paid, are the workers sure that if they do their utmost the rate will not be "cut"? *

* I am aware that sometimes alterations, up or down, have to be made in piece rates, where there have been obvious mistakes in

Would a system of collective or co-operative piecework be preferable to individual piecework? and so forth. I am confident that employers generally do not devote enough time to elaborating their wage systems. They do not wish to add to clerical work, and they vaguely fear the complexity of more perfect organization, not realizing that complexity may be a condition of vitality and growth.

Lack of space forbids me to discuss the question to what extent the energy of the workers can be evoked and their initiative and resource developed on the lines of profit-sharing or co-partnership. My personal opinion, however, is that, speaking generally, under both these systems the reward offered is too precarious, and too widely separated in time from the effort put forth by the worker, to constitute a strong and permanent incentive. Moreover, it must be remembered that organized labour is solidly opposed to these methods of remuneration.

Of course, there should be no attempt to secure increased output at the cost of undue physical or nervous strain on the workers.* This would be not only inhuman, but from the national standpoint a short-sighted policy.

fixing them, or if the process of manufacture is altered; but in such cases changes, *if made in consultation with the workers*, can be effected without harm.

* Considerable attention has been given recently by scientists to the question of industrial fatigue. (See in this connection Goldmark's "Fatigue and Efficiency," and the report prepared for the Home Office by Professor Stanley Kent, Cd. 8056.) Professor Kent points out that it is necessary not only to make sure that the individual is

(c) *Greater Security against Unemployment.*—But if the workers are to do their best, they must be assured that their energy will not lead to over-production and consequent unemployment. The belief is widely current in the ranks of labour that there is only a limited amount of work available, and that if an individual gets through his share of this in too short a time, either he himself will be unemployed, or he will "do his mate out of a job." I am confident that the tendency to restrict output is largely due to this suspicion, and all attempts materially to increase the productivity of workers will fail unless the fear of consequent unemployment can be dispelled. To a great extent, it can be dispelled by action in individual factories. If an employer wishes to set up a labour-saving machine, he should, if possible, guarantee that its introduction will not lead to the dismissal of any of his workers, or to a diminution of their earnings. The same policy must be adopted with regard to any speeding-up of work. This should not generally present serious difficulties, since in all large factories a constant leakage of workers is inevitable; and even if the loyal observance of the pledge involved a temporary surplus of labour, the situation would soon right itself. Moreover, increased efficiency, as

not consciously working beyond his strength, but that the work demanded of him is not such as to shorten his working life. He must have sufficient leisure day by day and week by week completely to recuperate the energy and strength given out in the course of his working hours. If care is taken to ensure this, there will be no danger of a man's becoming "too old at 40." But the matter requires much more care than is now given to it, even by considerate employers.

a rule, comes about gradually, in connection with first one detail and then another, so that an employer is hardly likely to find himself seriously overstaffed, although his improved methods may have materially reduced the labour required in particular processes.

But it is not enough to banish the fear of unemployment due to increased productivity from the minds of the workers in a given factory. Some way must be found of dealing with the whole problem. Every economist knows that the demand for goods is not a fixed quantity, and therefore the fact that a particular article can be made by fewer men does not necessarily involve a greater volume of unemployment. If it did, the great increase in the productivity per worker within the last half-century would have led to a corresponding diminution of the demand for labour, and it has done nothing of the kind. Yet there are undoubtedly cases of individual hardship, and the man who is "hit" is hardly inclined to generalize, or to say that "speeding-up" is good for labour in the long run. He only knows that he has lost his job. Now, whenever the increased output of a group of workers may spell disaster to some of its members, they will hesitate to do their best, and a vast supply of potential energy and efficiency will remain untapped. We must remember, however, that the unemployed, taking one year with another, only average 5 per cent. of the workers, and an insurance fund, equal to 5 per cent. of the national wage bill, would provide them all with unemployed benefit equal to their full wage bill. I am not advocating the

creation of such a fund, but merely showing that there is no insuperable financial difficulty in the solution of the unemployed problem.* I think the remedy for the particular form of unemployment which we are here considering will be found in three directions :—

1. Universal compulsory insurance against unemployment, with a great increase in the unemployment benefit of 7s. a week now payable in the insured trades. It would probably be advisable to allow industries to contract out of the national scheme if they could show that they were prepared to guarantee their workers terms at least as liberal as those which it provided.

2. The determination of employers of labour to safeguard their workers as far as possible against any short time or loss of employment that might result from increased productivity.

3. A more systematic attempt to regularize employment by the retardation or advancement of national and municipal contracts, according to the state of the labour market.

The whole subject, however, requires close examination before any adequate proposals can be submitted for dealing with it. There is scarcely any problem connected with industry which more urgently needs solution, for, as I have

* I refer to the employment of efficient workers. The problem of how to deal with the inefficient or "unemployable" class is quite distinct from that which is here being discussed.

pointed out, it is bound up with the question of the output of the workers and that of industrial unrest. Just now, when unemployment is almost non-existent, its menace is apt to be overlooked. But this condition is only temporary, and the problem will be very real again when the war is over.

(*d*) *Improved Personal Relations.*—A fourth, and fundamentally important, matter affecting the productivity of the workers is the degree to which those in authority, from the general manager down to the sub-foreman, are skilled in the difficult art of leadership. Curiously enough, this aspect of the situation is frequently ignored, even in factories which are, on the whole, well managed. But if industry is to be rendered so efficient that wages can be paid on the scale I have suggested, we must create among the workers an enthusiasm and an *esprit de corps* very far removed from the indifference and the grudging submission which often characterize them to-day.

The relation of many manufacturers to their employees is symbolized by the use of the word "hands." When a man is treated as one of a thousand "hands," he is apt to respond in the spirit of a "hand"—without interest or enthusiasm. Yet the attitude of his employer may not be due to any innate lack of humanity or sympathy; it may simply be the outcome of the rapid development of large-scale business. Gradually, and to a great extent unconsciously, the gulf between master and man has widened, until, in perhaps the majority of cases, there has ceased to be any personal

relationship at all. Shop managers and foremen have been appointed because of their technical knowledge rather than their knowledge of men. Lacking the gift of leadership, they have sought, with perseverance worthy of a better cause, to achieve their ends by driving. But workmen, whether overtly or tacitly, refuse to be driven, and they are quite as tenacious of purpose as those who nominally control them. Not only does despotic management in a workshop fail to induce them to do their best, but the multitudinous acts of petty tyranny to which it condescends are often largely responsible for labour unrest. It is high time that we expunged the term " hands " and all that it connotes from our industrial vocabulary. A thousand " hands " are simply a thousand human beings, each with his own personality, his own peculiar temperament, each a potential fund of loyalty or hostility, and each, probably, as sensitive and as responsive as the employer himself.

A works manager who recognizes the truth of this statement will see to it that no one in his mill is placed in a position of irresponsible power that may readily be abused. Not only will he put a stop to the bullying and nagging of minor officials, but he will always try to select for posts of authority men who have the instinct of leaders. Such men will never fall into the error of over-emphasizing their authority, and they will realize that a nervous worker may simply become paralyzed by too much supervision. They will not pass from bench to bench with a suspicious scrutiny that is expectant of the worst. They will expect the best, and, as a

rule, they will get it. Again, an ideal works manager will remember that although he may regard his working force as a unit, its members are keenly conscious of their individualities. Each one looks out on life through his own pair of eyes, and judges of an environment by its reactions upon himself. It is small comfort to a man to be told that the average wage in his workshop is satisfactory if his own wage falls far below it; and the term "rough justice" often covers a number of petty acts of injustice, each of which, however trivial, leaves a small sore that is apt to rankle. Employers must give far more thought to the whole question of personal relationship. Hitherto they have concentrated too largely on matters of machinery and finance, probably because the great expansion of industry has arisen from the mechanical inventions of the last century, and from the development of the limited liability company. They must now learn to concentrate on practical psychology. I know that, when I ask for sympathetic leadership, it may be suggested that I merely want to exploit the worker's zeal and loyalty for the sake of greater profits. But the criticism would be irrelevant, as we are discussing the higher efficiency of the worker, which makes a greater output possible, as one, and only one, condition of a wage level which shall be permanently higher.

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